

MACWEEK

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INSIDE

Slides overnight

They are as close as the modem
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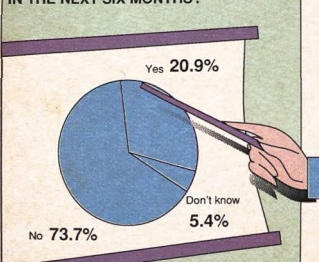
"Actually, a computer is a device that can represent reality; it's ... not a counting machine."

Breaking barriers

Brenda Laurel works
to make multimedia technology accessible
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ZOOM IN

DO YOU PLAN TO PURCHASE A DESKTOP PRESENTATION PROGRAM IN THE NEXT SIX MONTHS?



Microsoft aims to divide and conquer with low-end Write

BY RUSTY WESTON

MacWEEK Staff

REDMOND, Wash. — Microsoft Corp., vying for total dominance of the Mac word processing market, last week introduced a program similar to Word at less than half the price.

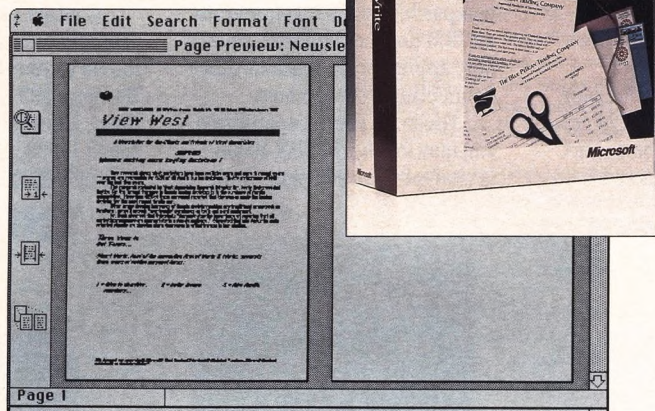
At \$175, Microsoft Write will rival T/Maker Co.'s WriteNow and Claris Corp.'s MacWrite 4.5. Microsoft Write vastly exceeds the functionality of its competition, according to the Redmond, Wash., company. Write is scheduled to ship next week.

The timing of Write's release may be critical for Microsoft. A source close to Claris, based in Cupertino, Calif., said an enhanced version of MacWrite is expected to be announced after Jan. 1. The upgraded

MacWrite will have functions similar to those in WriteNow, the source added.

"Microsoft has made it very clear it wants to dominate the word processing market," said Apple analyst Michael Orsak of Robertson, Colman & Stephens, a San Francisco investment bank.

It "sounds like the gloves are off now that Claris Corp. is involved with MacWrite," said
See MICROSOFT, Page 29



Microsoft Write will offer many of the features of the company's popular Word but at less than half the price.

Industry skittish after market panic

BY RUSTY WESTON

MacWEEK Staff



The strangest week in Wall Street history left microcomputer vendors mired in uncertainty about a possible recession.

Despite recent strong earnings reports by Lotus, Microsoft, IBM, DEC, Adobe, Apple and Compaq, institutional investors dumped these stocks like it was Judgment Day and they wanted to liquidate their worldly possessions.

Disconcerted small investors watched in dismay last week while the value of their shares plunged about 20 percent across the board before bouncing back up in a portfolio-

salvaging rally.

Faced with investor turmoil and wild market fluctuations, sobered underwriters delayed venture capital and stock deals.

Microcomputer hardware and software

Stock market dive hits computer industry investors. Page 13.

market analysts were hard-pressed to assess the long-term damage to the corporations. Analysts conceded that a bear market can touch off a recession, but last week's sell-off may have been due to irrational fears.

See PANIC, Page 29

Motorola chip ready for a new generation of Macintoshes

BY ABIGAIL CHRISTOPHER

MacWEEK Staff

AUSTIN, Texas — The opening bell for a new round of hardware innovation will be rung this week when Motorola announces the volume production schedules of its next-generation 32-bit processor, the 68030.

Executives from Apple, Sun, Unisys and NCR will be at press conferences in New York and Santa Clara, Calif., to affirm their support of the 68000 series, the microprocessor family that is at the heart of toys, games and car door openers as well as Macintoshes, laser printers and engineering workstations.

The computer manufacturers are not expected to announce new products based on the "Oh Thirty," as the 68030 is known around Motorola. However, their presence apparently signals a commitment to using the new chip in the next generations of their computers.

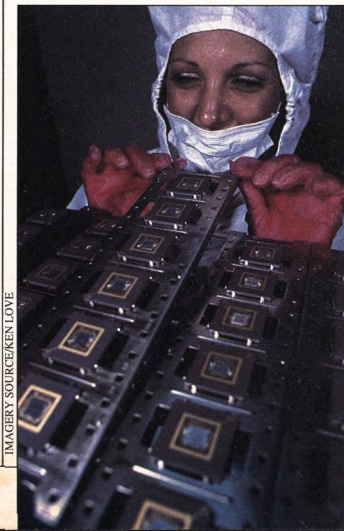
"I would not be surprised if we saw a 68030 offering from Apple by the second quarter of next year," said Bob Herwick, a market analyst at Hambrecht & Quist of New York.

Sources close to Motorola suggested a 68030 accelerator board for the Mac may be introduced before an entirely new Mac model.

There are three versions of the microprocessors that run at 16, 20 and 25 MHz. The 16 MHz and 20 MHz versions will ship in volume next month. Motorola will seed developers with the 25-MHz chip in December and

See MOTOROLA, Page 29

Motorola's 68030 is expected to surface in advanced new workstations.

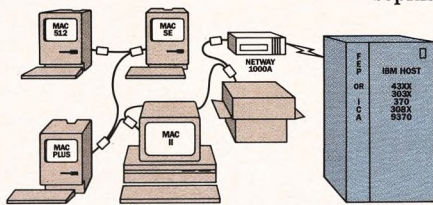


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But there is a universal solution that unites all your Macs—the 512 KE, the Plus, the SE,



Corporate workgroup using AppleTalk.

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LATE NEWS

Apple ships MultiFinder to developers

CUPERTINO, Calif. — Apple shipped more than 6,000 copies of the release version of MultiFinder to developers last week, and, according to Lynnea Johnson, product manager, the product should be in dealers' hands this week.

The long-anticipated program was originally scheduled to ship in mid-September, but it ran into compatibility problems with some third-party programs, according to sources close to the company. MultiFinder will be part of a package that includes System 4.2 and Finder 6.0.

MultiFinder is a multitasking operating system for the Mac that will allow users to have up to 30 programs open at the same time. The number of open programs is limited by the amount of RAM available.

TI introduces low-priced PostScript laser printer

TEMPLE, Texas — Texas Instruments joined the queue of low-priced PostScript printers with the announcement of its OmniLaser 2106 laser printer, priced at \$4,595.

The printer emulates the Diablo 630, the Hewlett-Packard Laserjet/Plus, TI855 DP/WP and HP 7475A. Scheduled to ship in the first quarter of next year, Texas Instruments' printer also comes equipped with twin interfaces, one for the Mac and the other for IBM PCs and clones.

Although it has a port for AppleTalk capability, TI representatives said the printer's output speed of six pages per minute does not make it an ideal printer for a LAN.

The printer has a resolution of 300 dpi and comes with 35 resident fonts. The controller uses a 68000-based microprocessor with 2 Mbytes of RAM. Additional font families are available on plug-in cartridges from TI and are priced at \$329.

Apple expands investment group

CUPERTINO, Calif. — Apple announced last week the expansion of its strategic investment group and the promotion of Daniel Eilers from director to vice president of strategic investments.

Eilers, 32, will report to Albert Eisenstat, senior vice president of corporate development. Investment activity will now include not only venture capital investments but potential acquisitions, too.



The QMS PS-810 printer uses the latest version of Adobe's PostScript page-description language.

First Canon SX-based laser printer

BY JIRI WEISS
MacWEEK Staff

MOBILE, Ala. — QMS Inc. is shipping a PostScript laser printer that introduces Canon's new SX engine to the Macintosh marketplace. The SX offers blacker blacks, more solid tones and improved performance.

The \$5,495 QMS-PS 810 also features a controller with a 16-MHz 68000 microprocessor, 1 Mbyte of ROM and 2 Mbytes of RAM that is expandable to 3 Mbytes.

"The SX is cheaper, has a little better blacks, is longer lasting and makes a more compact printer," said Tom Mandel, president of CADEX, a San Francisco supplier of desktop publishing products for the corporate marketplace.

Jonathan Seybold, desktop publishing analyst and president of Seybold Publications of Malibu, Calif., said, "It's an overall improvement over the CX. The SX replaces the CX in the Canon product line. Everyone will have to change over ... including Apple."

The CX engine, still used in Apple's LaserWriter and LaserWriter Plus printers, does not print solid black areas very well, said Robert Owens, a spokesman for Mobile, Ala.-based QMS Inc.

"If you were laying down large black areas, you could see the blacks weren't solid. With the

SX, Canon has improved the image," he said.

The new engine is more compact and lighter than the CX, Owens said. At 44 pounds, the QMS-PS 810 printer is 43 percent lighter than the 77-pound LaserWriter Plus.

The QMS-PS 810's higher processor speed and additional memory when compared to the LaserWriter Plus, which runs at 12 MHz and includes 1.5 Mbytes of RAM, means that even a page with graphics and several fonts takes about 50 percent less time to print on the QMS machine than on a LaserWriter, Owens said. Another reason for the increased speed is that QMS uses the latest version, 47, of Adobe's PostScript page-description language, he said.

Copies of the same page are printed at a rate of eight pages per minute.

The QMS-PS 810 includes 35 PostScript fonts in its ROM, Owens said. "The additional memory and the way we partition it means that users can store up to 10 to 15 additional downloadable fonts."

The QMS-PS 810 can be connected to a variety of networks through its serial, parallel and AppleTalk interfaces, according to QMS.

The QMS-PS 810 is available immediately through the Laser Connection, a QMS subsidiary, or from the company directly.

QMS Inc. is located at 1 Magnum Pass, Mobile, Ala. 36618; (205) 633-4300. ■

Tektronix controller for color printers

BY ABIGAIL CHRISTOPHER
MacWEEK Staff

WILSONVILLE, Ore. — Tektronix Inc. is developing printer controllers for its color printers to support several page-description languages, including Hewlett-Packard's HPGL and PostScript, a company spokesman said.

Tektronix of Wilsonville, Ore., will not work with either Adobe or a clone manufacturer for PostScript support, said a source within the company, leading to speculation that Tektronix may offer its own PostScript clone.

"We are working on the next generation of printer controllers made to support industry standards," the source said.

Tektronix recently announced that it has signed a licensing agreement with URW Karow Rubow Weber GmbH, a Hamburg, West Germany-based developer of typeface digitizing software. URW's IKARUS software will allow Tektronix, manufacturer of the 4693D Mac-compatible color printer, to digitize its own typeface and font libraries and to scale individual letters using the company's proprietary scaling algorithms.

"Intelligent" font scaling algorithms have also been developed by font vendor Bitstream Inc. of Cambridge, Mass., and provide an accurate rendering of a particular font outline on screen or printed media. ■

Quiet Quadram closer to '386 board

BY JON SWARTZ

MacWEEK Staff
NORCROSS, Ga. — Quadram executives stopped short of disclosing plans to develop an 80386 coprocessor board for the Macintosh last week, but the product seems closer to becoming a reality.

Robert G. Brown, Quadram president, would neither confirm nor deny development

of the '386, but he hinted that Quadram would consider discussing plans for development of a '386 board as early as next month at COMDEX/Fall '87, Nov. 2-6 in Las Vegas.

"We have entertained the idea but not started on it," said Mark Butler, Quadram marketing manager. "It is a possibility, however."

Meanwhile, AST Research Inc., the Irvine, Calif., developer of Intel chip-based coproces-

sor boards for the Mac SE and II, also would neither confirm nor deny plans to develop a '386 card of its own.

"There is an unquenchable appetite for the power and speed of a '286 card, and there should be an equal need for the '386," said Mark LeBar, marketing manager of Apple products at AST. "The Mac II has an attractive market for enhancements, and I'm sure Quadram and others would be interested."

Quadram currently manufactures '386 coprocessor boards for PC XT's, Butler said.

At stake are an estimated 2 million Macs,

according to analysts. In fact, Apple recently licensed Chips and Technologies Inc., a San Jose, Calif.-based chip maker, to produce an inexpensive logic chip set that emulates microprocessors. The '386 clone chips should be ready by next year, sources said.

A source familiar with Quadram said the board maker hoped to meet with Apple at COMDEX to discuss joint development of a '386 board for the Mac.

AST announced in March it would make boards that allow MS-DOS applications to run in a window on the Mac II screen. ■

Novell NetWare coming for Mac

BY CLIFF LEHMAN
and JON SWARTZ

MacWEEK Staff
PROVO, Utah — Novell Inc. officials admitted last week that the company is preparing its NetWare network operating system for the Macintosh for scheduled release in March.

Company representatives also said a NetWare version for workstations from Sun Microsystems Inc. would be available later.

Each software package would cost approximately \$100, sources said.

Mark Calkins, vice president of marketing for Novell's NetWare division, confirmed reports that Novell is working with third-party developer Dayna Communications of Salt Lake City on software that would support Ethernet, UNIX and X.25.

Calkins said Novell's Universal Network Architecture, which supports Transmission Control Protocol/Internet Protocol (TCP/IP) and Sun's Network File System (NFS), would link Sun systems.

Novell's plans to develop software for the Mac is the company's first step toward support of multiple operating platforms, said Brad Baldwin, telecommunications analyst at Dataquest of San Jose, Calif.

Although NetWare has operated only on MS-DOS personal computers, Novell has combined solid products and marketing guile to absorb nearly a quarter of the LAN market since its incorporation in January 1983.

Version 2.2 of NetWare will support Macintoshes on a Novell network when the software package is released next spring, industry observers said.

Novell officials said they didn't know when the Sun workstation software would be released.

Dayna Communications, maker of the MacCharlie coprocessor and the Dayna File, will offer its own version of the file server software for use on all-Macintosh networks, a source at Dayna said.

The source said the program will require a PC AT server and be offered as an alternative to AppleShare and TOPS.

Calkins said the network file server will support AppleTalk through an add-in board made by Tangent Technologies of Norcross, Ga., and sold by Dayna.

The add-in board, called PC MacBridge Plus, links IBM PCs to AppleTalk networks. ■

Decisions, I

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Draw It Again Sam gives artists more drawing power

BY JIRI WEISS

MacWEEK Staff

FRAZER, Pa. — Artists can work on as many as 10 overlays and create a library of frequently used drawings in a color drawing program being developed by Aba Software Inc.

The \$150 software package, called Draw It Again Sam, takes advantage of the built-in color capabilities of QuickDraw, giving users

six colors in addition to black and white.

The ability to draw on separate layers will simplify making color separations and preparing complex drawings.

The library function lets users store drawings that can then be dragged into the picture while drawing, said George Storm, Aba's vice president and founder.

"You can have instantaneous access to any drawing on the screen. This is the only

program that does it efficiently unless you go to a CAD system," he said.

Draw It Again Sam includes a function that takes a drawing and reduces it to the size of an icon that stays at the bottom of the screen, he said.

Draw It Again Sam debuted at Apple's Paris Expo Oct. 1, Storm said.

Aba Software Inc. is located at 2 Davis Ave., Frazer, Pa. 19355; (215) 644-3580. ■

Ad agencies eager for Mac graphics

BY ELINOR CRAIG

MacWEEK Staff

NEW YORK — A Macintosh seminar targeting advertising agencies opened to a full house last week at the Marriott Marquis in New York. Meet Your New Creative Partner... was the coordinated effort of Apple's regional office and The Computer Factory, a leading Apple dealer in the New York area.

Art directors, production personnel and creative services from top ad agencies and publishing companies attended to see what the Macintosh has to offer. A market ripe for the Mac's strong graphics capabilities, advertising agencies have been resistant to computer design, according to seminar presenters.

According to Gordon Haight, from Karp, Newton, and Van Brundt, a large advertising firm in New York City, "... all the big boys are playing in this field."

"This idea is a natural progression for me because I worked in the ad field for years before I started with Apple," said Chris Stocker, Apple account executive for The Computer Factory and co-organizer of the seminar. "Once at Apple I started asking where were all these tools when I was in advertising."

The idea for the seminar came out of smaller desktop publishing seminars, according to Stocker. "We watched who came to those and started targeting work groups." This packaged presentation will resume in January and travel around the region, he said.

Quark Inc., Microsoft Corp., Cricket Software and Adobe Systems Inc. and top users such as Damian Pezzano, director of information services at the ad agency, BBDO, and Gary Cosimini, senior art director, operations technology at The New York Times, gave presentations.

Along with Apple and the other attending software companies, Adobe has developed a strategic policy concerning ad agencies. "It is an obvious place to market," said Jim Willis, national sales manager for Adobe. "We have a push/pull strategy. We present Illustrator and the art directors ask for more. Ad agencies and the news media are a strategic market for us."

Attendees eagerly crowded the various presentation tables to get a closer look at the products available. "Productivity is the bottom line," said Rick Colina, art director for Gannett National ad sales. "Our director of creative services recently bought a Mac, and I can see that we will definitely buy more software after seeing these products."

The demonstrations included a product debut by Publications Technologies Inc., of Stamford, Conn. The new product, called ULTRA, is an automated layout system. Custom tailored to individual publication needs, ULTRA is a macro-driven shell that automates the layout procedure in Quark XPress. Priced at \$75, ULTRA is available from the PageWorks division of Publication Technologies. ■

s, Decisions.

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— InfoWorld June 29, 1987

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New file-compression program stirs debate

BY EMILY BROWER

MacWEEK Staff

The introduction of a new shareware file-compression program called StuffIt is causing confusion among telecommunications users and opening discussion about telecommunications standards among Mac programmers.

Until StuffIt was released in early October, PackIt III, another shareware file compressor, was by default the industry standard. But StuffIt's faster, more efficient compression algorithms have made the new program an almost instant hit among telecommunications users.

File-compression programs speed electronic transfer of large documents by packing file data into smaller sizes. They also can create single packed files out of several documents. Transferring a compressed graphic document can be three to four times faster than sending the file in its original form.

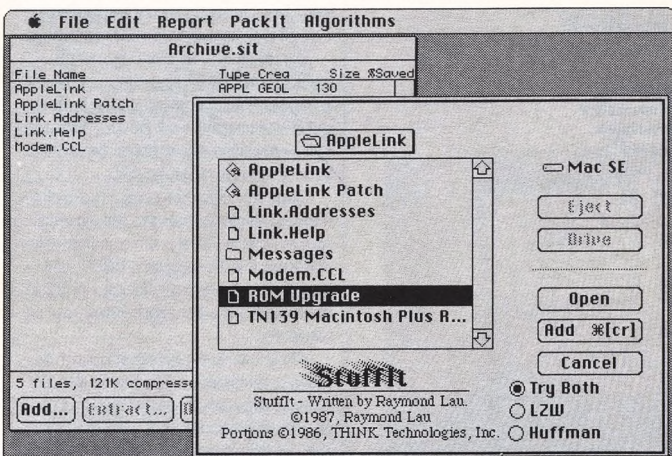
PackIt, by Harry Chesley, and StuffIt, by Raymond Lau, are used most frequently to compress files for transfer through bulletin boards and electronic services like CompuServe or Delphi. Neil Shapiro, systems opera-

tor for the Macintosh forums on CompuServe, said almost 90 percent of the help-line calls he receives concern packed files.

To avoid requiring users to purchase StuffIt and PackIt, Shapiro, along with other programmers like Don Brown, president of CE Software of Des Moines, Iowa, worked to find ways to make the decompression function available in a public domain application. Lau has agreed to allow users to unpack their files with his program free of charge. For files created with PackIt, Brown wrote a public domain utility called Unpacker that unpacks packed files.

For the present, these solutions will suffice in the place of determining a compression standard. "Standardization is desirable, but I think we can survive with the two standards of PackIt and StuffIt," Brown said. "However, there is a need for non-commercial compression programs, and I think Apple Computer should be considering this. Packing and unpacking is so basic a need that it ought to be supplied by Apple itself as a part of system software. One consistent compression interface would be very good for telecommunications." ■

Raymond Lau's StuffIt has added a new dimension to the confusion over file-compression programs.



Developers consider porting to Windows

BY RUSTY WESTON

MacWEEK Staff

DALLAS — Macintosh developers are taking a close look at porting programs to Microsoft's Windows, the IBM PC-compatible interface.

Dennis Tillman of Microsoft Corp. said at last week's OS/2 developers' conference here that approximately one-fifth of the attendees were interested in learning how to move Macintosh graphic-based programs to Microsoft's similarly styled Windows 1.4.

Tillman, marketing manager for the Redmond, Wash., company's university training programs, said an updated Version 2.0 will be released by Jan. 1.

The Dallas OS/2 conference marked the fourth and final three-day training seminar for the developers. About 2,300 people attended the four conferences, said Tillman, who coordinated the events.

For \$3,000, the attendees received a late beta version of OS/2 code, written in MS C Version 4.5, plus 11 binders of OS/2 information discussing LAN Manager and Presentation Manager. The package also included a macro assembler, a debugger, a subscription to Microsoft Systems magazine, DIAL on-line support and videotapes of the conference.

Tillman said the conference seminars did not digress to a "a battle between Macintosh and the Presentation Manager. We made no comparisons at the conference. It's not part of our strategy."

Apple and Lotus developers attended previous conferences held in Seattle in June and Anaheim, Calif., in September. In July, Microsoft held its biggest conference in the Big Apple, with 680 attendees, Tillman said.

The most notable Macintosh developer present in Anaheim was Guy Kawasaki, president of ACIUS Inc. of Cupertino, Calif., developer of 4th Dimension database software. Representatives of AST Research Inc. of Irvine, Calif., also attended the conference. ■

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BPA membership applied for April 1987.

MegaGraphics prepares accelerator cards, monitors for COMDEX

BY CLIFF LEHMAN

MacWEEK Staff

CANOCA PARK, Calif. — MegaGraphics Images Corp. is putting together a collection of new products for possible showing at COMDEX/Fall '87 in Las Vegas Nov. 2-6.

The MegaSpeed 20 accelerator card for the Mac Plus will ship the first week in November and be shown at COMDEX, said Diane Scott, vice president of communications for the Canoga Park, Calif., company.

The accelerator board is based on a 68020 microprocessor and includes a 68881 math coprocessor. A 1-Mbyte configuration sells for \$1,695; a 4-Mbyte version for \$2,795. The card is compatible with MegaGraphics' video board for the Mac Plus, the MegaScreen 2.

An SE version of the accelerator, the

MegaSpeed 20 SE, is in the works but will not be shown at COMDEX. Prices for models of the MegaSpeed 20 SE have not been set. Both the Mac Plus and SE versions were developed by Total System Integration of Eugene, Ore.

MegaGraphics also is preparing a color video card for the Mac II, called the MegaScreen 2008. According to Scott, the company hopes to have the card ready for COMDEX, but it may be delayed until January.

The 2008 card allows users to choose between 1-, 2-, 4- or 8-bit-per-pixel modes to display between 256 and 16 million colors on the screen. The card supports resolution of up to 1,024 by 896 pixels; its refresh rate at that resolution is 63 Hz.

The MegaScreen 2008 will be available separately or bundled with a 75-dpi 19.5-inch

color monitor. The MegaScreen can be used with a monochrome monitor to produce 256 gray levels.

The MegaScreen Professional monitor is in the last stages of production. The 19.5-inch screen will ship in early November. The new monitor uses a black tube from Video Monitors Inc. of Eau Claire, Wis., and will provide much better contrast than MegaGraphics' previous large-screen products, according to Scott.

A 15-inch portrait-mode monitor, the UniPage, also is in the works. It is not certain whether the 75-dpi screen will be shown at the COMDEX show, said Scott. Prices on the two monitors are not yet available.

MegaGraphics Images Corp. is located at 20954 Osborne St., Canoga Park, Calif. 91304; (818) 407-0571. ■

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SNAPSHOTS

Crystal Paint generates intricate repetitive patterns

SCOTTS VALLEY, Calif. — Desktop publishers and graphic designers can easily create intricate designs with repeating patterns using Crystal Paint from Great Wave Software.

The program, introduced two weeks ago at the Software Publishers Association conference in Cambridge, Mass., is not a full-scale paint program. It is an accessory meant for use with other draw and paint programs, according to the company.

The \$49.95 program generates repeating symmetrical designs from small graphical elements. Images can be imported from other drawing or word processing programs. The resulting image then can be pasted into other documents.

Crystal Paint comes with more than 100 "kaleidoscopes" that can be incorporated into designs. The current version of the program is available only in black and white.

Great Wave said it believes Crystal Paint will be used by high-end designers for tasks such as dress and wallpaper design. In addition, the program is aimed at the desktop publishing market for creating borders and other page elements and also will be targeted at the home and school markets.

Great Wave Software is located at 5353 Scotts Valley Drive, Scotts Valley, Calif. 95066; (408) 438-1990.



COURTESY GREAT WAVE SOFTWARE

NuDATA drives offer fast access, flexible interleaving

SANTA CLARA, Calif. — Three new, full-height external drives for the Macintosh Plus, SE and II from NuDATA feature average access times of 16.5 milliseconds and flexible interleaving.

The drives — the \$2,350, 90-Mbyte Data Cell 90; the \$3,395, 150-Mbyte Data Cell 150; and the \$7,155, 290-Mbyte Data Cell 290 — can be configured with an interleave factor of either 1 to 3 or 1 to 1.

The 1-to-1 interleave allows the drive to be used for maximum efficiency on the Mac II, according to Eric Herzog, director of sales and marketing. "On a Mac Plus, you use a 1-to-3 interleave to slow the drive down," he said.

The drives include Omni Backup/Restore, a program for file-by-file backup, according to NuDATA. "Users see files and folders in hierarchical trees and can back up from any volume to any volume, even floppy to floppy," a company spokeswoman said. Disk partition software lets users divide their disk space and set password protection. A LaserWriter spooler and copy utilities also are included.

The drives are housed in beige or platinum cases and are cooled by a fan. Their heads park automatically, and users can select hardware SCSI configuration for daisy chaining on the back panel.

NuDATA drives are manufactured by Control Data Corp. They are available immediately. NuDATA is located at 3206 Scott Blvd., Santa Clara, Calif. 95054; (408) 727-1049.

SuperMac lowers price of memory, accelerator upgrades

MOUNTAIN VIEW, Calif. — Emulating Apple's recent price reductions for memory upgrades, SuperMac Technology announced price cuts last week on two of its memory and accelerator upgrade products.

"The price reductions were made recognizing that MultiFinder and HyperCard are creating a need for 2- to 4-Mbyte memories on the Mac," said Tom Rielly, SuperMac director of marketing.

The Prodigy SE, formerly sold by Levco and now available from SuperMac, is a 68020 upgrade for the SE. When sold by Levco, the Prodigy SE costs \$1,499, \$1,999 and \$2,799 for 1-, 2- and 4-Mbyte upgrades, respectively. A 68081 math coprocessor was available separately for \$299. SuperMac now bundles the math coprocessor with the Prodigy SE at no extra cost. In addition, the price of the 4-Mbyte upgrade was reduced to \$2,699.

The 1 Plus 1, a 2-Mbyte memory upgrade for the Mac Plus, now sells for \$399 — down from \$499. The 1 Plus 1 from Levco replaces SuperMac's SuperRam for the Mac Plus.

Both products became part of SuperMac's product line when Levco was acquired by SuperMac's parent company, Scientific Micro Systems, in August.

Along with the announcement of price cuts, Levco's relationship to SuperMac was further defined. According to Rielly, SuperMac will concentrate on mass market products for the Mac and Levco will remain an Apple VAR specializing in AEC (architecture, engineering and construction) and desktop publishing solutions.

SuperMac Technology is located at 950 N. Rengstorff Ave., Mountain View, Calif. 94043; (415) 964-8884.

Jasmine releases 50-Mbyte hard disk drive for Mac II

SAN FRANCISCO — Jasmine Technologies Inc. last week started shipping a 50-Mbyte internal hard disk drive for the Macintosh II.

The InnerDrive 50/II has an average access time of 26 milliseconds. It comes with mounting brackets and connecting cables. Installation requires no expertise, according to the company.

Jasmine includes a one-year full warranty, backup software and 9 Mbytes of public domain software and shareware.

The InnerDrive 50/II, priced at \$999, is intended as an entry-level product, according to Jasmine. The company started shipping a \$1,499, 90-Mbyte drive, its first internal drive for the Mac II, in August.

Jasmine Technologies Inc. is located at 555 De Haro St., San Francisco, Calif. 94107; (415) 621-4339.

Quark XPress 1.1 to ship Nov. 1

DENVER — Quark XPress 1.1, originally scheduled to ship this month, will ship Nov. 1, according to Jennifer Stevens, a Quark Inc. sales executive.

The updated version of XPress includes support of the TIFF format for importing scanned images. TIFF images are displayed in continuous tone display rather than as dithered images and can be printed or displayed as negative, high contrast or posterized images.

Special effects include a 60-line screen; 30-line screen, 45-degree angle; 20-line dot screen, 45-degree angle; and the ability to customize picture screening. XPress 1.1 also will support importing color TIFF images.

Documents made with Microsoft Works and T/Maker Co.'s WriteNow also are supported.

A Find/Change by Font Attributes option has been added to the Edit menu. The option allows users to search and replace by font, font size, style or any combination of these attributes. Changes can be made individually or globally.

The new version of XPress also includes one-quarter point font sizes and an option to save text only.

Quark Inc. is located at 300 South Jackson St., Suite 100, Denver, Colo. 80209; (303) 934-2211.

QMS ships laser printer for bit-mapped, complex graphics

MOBILE, Ala. — QMS has started shipping its new Lasergrafix 1510 laser printer, aimed at environments that require high-volume printing of bit-mapped and complex vector graphics.

The 300-dpi printer is priced at \$11,995. It comes with 6 Mbytes of RAM, allowing simultaneous page processing of two fully bit-mapped legal or A4-size pages at a speed of 15 pages per minute.

The printer includes either a resident Tektronix 4010/4014 emulation or QMS' proprietary text

and graphics print language, QUIC, for outputting vector or bit-mapped graphics. Also included in the controller are Diablo 630, QUME and Sprint 11 emulations for word processing applications.

Sixteen resident fonts are included. Additional printer-resident and host-downloadable fonts are available from QMS.

Lasergrafix 1510 connects to most network, mini and mainframe host systems.

QMS can be reached at P.O. Box 81250, Mobile, Ala. 36689; (205) 633-4300.



COURTESY QMS

Desk Accessory manages billing, tracks time and expenses

ESSEX, Mass. — TIMESLIPS III, a Desk Accessory created by North Edge Software, tracks expenses and billing for service professionals who base their fees on the time spent on the client's project, such as lawyers, accountants, engineers and architects. The program, priced at \$199.95, includes two modules, TSTIMER and TSREPORT, and is due to start shipping Nov. 16.

TSTIMER can manage client information, dates, projected times and description records. The program can track up to 2,000 clients, 250 professionals and 250 activities. It will record time spent and expense charges, and then calculate the fee.

FCC ponders on-line access charges

Thousands of letters oppose fee for on-line services

BY JIRI WEISS

MacWEEK Staff

BOSTON — An electronic letter-writing campaign, a lot of testimony and a concerned congressional subcommittee may make it difficult for the Federal Communications Commission to implement its proposed access charges on computer on-line services.

The FCC wants enhanced service providers (ESPs) such as CompuServe, McDonnell Douglas Corp.'s TYMNET and Telenet Communications Corp.'s Telenet to pay the same charges as long-distance telephone carriers pay to local telephone companies.

The FCC sees the charges it proposed in July as a matter of equity. The ESPs originally were exempt from the charges levied on long-distance phone companies following the 1983 breakup of AT&T to give the ESPs time to grow. Now the ESPs are mature enough to bear the burden, the FCC argues.

The ESPs counter that the fees of approximately \$5 per hour will force them to raise some off-peak rates as much as 500 percent, perhaps putting some providers out of business. Their supporters include computer industry groups such as the Association of Data Processing Service Organizations (ADAPSO); educational groups like EDUCOM, a consortium of 500 universities; and users' groups such as the Boston Computer Society, which has never taken an advocacy stand before.

Even some of the telephone companies that may profit from the change have asked for reconsideration of the proposed fees. A statement by NYNEX Corp., the parent company of the New England and New York telephone companies, argued that neither it, the FCC nor the service providers have the technology to implement the charges because they have no way to tell how much of the ESPs' traffic goes to interstate locations.

The FCC has not collected any data on the effects of the charges on the enhanced services industry, FCC Chairman Dennis R. Patrick told the House Subcommittee on Telecommunications and Finance at a public hearing in Boston on Oct. 2.

How will the charges effect the price of information? "This is precisely the type of information the commission is seeking in this notice (the process of soliciting comments)," Patrick said.

Congressman Edward Markey, D-Mass., who heads the subcommittee that oversees the FCC, said at the hearing that the effect could be drastic. "I fear the FCC charge begins to make information services the exclusive prerogative of the rich," he said.

Other witnesses said that the negative effects of the charges will extend beyond the ESP industry.

For example, increased costs will force public and university libraries to curtail their on-line bibliographical searches. It may even hurt the United States' trade relations in

telecommunications.

The United States has succeeded in convincing countries such as Japan that they should not treat ESPs like conventional telephone services, said Alfred C. Sikes, assistant secretary for communications and information with the U.S. Department of Commerce. "[Now] we apparently have the FCC determining that the enhanced service operations are like telephone services," he said.

"If we can't persuade foreign telecommunications administrations to liberalize their policies, that will curtail one promising means of expanding U.S. participation in overseas communications market," Sikes said.

Users of on-line services have voiced their

"We have made our case that the charge is not justified, and the FCC may have to back down by reducing the amount or phasing it out completely."

concern with thousands of letters, many downloaded from bulletin boards, in perhaps the nation's first case of what CompuServe dubbed "on-line advocacy."

The FCC has been receiving about 1,000 letters per week against the proposed rule. The subcommittee has received about 4,000 letters in all, said Frank Principi, a subcommittee staff member. Principi said during Judge Robert Bork's Supreme Court nomination hearings, one senator talked about weighing the letters instead of counting them. "With us it's getting to that point," Principi said.

The FCC doesn't have an accurate count of how many letters it has received because many letters were sent in duplicate to all the FCC commissioners, an FCC spokeswoman said. "We don't count votes," she said. "We are more interested in quality of arguments than in the volume of mail."

Public pressure forced the agency to extend its deadline for receiving public comments by a month. The final deadline for receiving replies on comments was Oct. 26.

The FCC said its staff will then review all the comments and make its recommendation to the agency's four commissioners, who have the final say. A simple majority is enough to make the charge stick.

"There is no time frame for the review process," the FCC spokeswoman said. "It would be hard to make the Jan. 1 deadline."

If it approves the charges, the FCC may face legislation from Congress, Principi said. "We have made our case that the charge is not justified, and the FCC may have to back down by reducing the amount or phasing it out completely," he said. ■

Blyth to link SQL to Omnis

BY JIRI WEISS

MacWEEK Staff

FOSTER CITY, Calif. — Blyth Software Inc. plans to interface its relational Mac database, Omnis 3 Plus, to large corporate databases that use Structured Query Language (SQL).

The company will link Omnis to SQL distributed databases from SYBASE Inc. of Berkeley, Calif., a software company that is looking into porting its SQL database products to the Mac. SYBASE's DataServer databases are used by corporations on VAX and Sun computers to keep large relational databases in manufacturing and value-added networking for telecommunications and by financial institutions for automated trading, said Stewart Schuster, SYBASE's marketing vice president.

"Blyth will integrate the SYBASE programming language interface to build links between Omnis 3 Plus and SYBASE DataServer," said Michael Kenny, president of Blyth Software of San Mateo, Calif.

Eventually, Blyth will be able to communicate with other SQL databases, said Schuster. SYBASE will develop interface and networking for the new products. Product announcements are expected early next year.

A growing portion of Omnis 3 Plus sales are in corporations and government, said Kenny. "Support of the SYBASE SQL DataServer will enhance customer productivity by giving them access to corporate data stored on a miniframes and mainframes," he said.

SQL is a relational database language that is becoming an industry standard for retrieving data from databases.

SQL is similar to ACIUS' 4th Dimension and Ashton-Tate's dBase Mac, but unlike those fourth-generation languages, it lacks an application development environment for handling, for example, I/O or preparing reports, said SYBASE's Schuster.

Unlike most programming languages, SQL does not contain procedural statements such as if/then statements. SQL has to be embedded in another relational database language or a pro-

gramming language like C or COBOL.

But SQL lets users manipulate whole sets of records and frees them from having to tell the computer how or where to access a particular piece of data, Schuster said.

First defined in 1974 by IBM's San Jose Laboratory, SQL is now used by the majority of mainframe and minicomputer databases, including IBM's DB2.

"It's hard to find databases that aren't SQL," said Paul Cubbage, a software industry analyst with Dataquest of San Jose, Calif. "Everybody is signing up to the SQL religion." SQL is indispensable for the corporate connectivity environment, he said.

Last year, SQL was adopted by the American National Standards Institute as a standard. IBM will incorporate it into its OS2 Extended Edition operating system scheduled for release next year. It will also be the standard for the company's Systems Application Architecture.

SQL may have become a standard because IBM has adopted it rather than because it is a better language, said Edward F. Codd, the father of the relational database concept, who now heads the Relational Institute in Palo Alto, Calif. "They did something ill-advised. They wanted to replace predicate logic that took the brains on this planet 2,000 years to invent," he said.

The language was slapped together with no good way of handling, for example, duplicate records or replacing values with variables or functions, according to Codd. "SQL has an awful lot of problems, but it has become a standard; there is no ignoring it," he said.

Another problem facing SQL is standardization, Codd said. Many different dialects and extensions to SQL exist. The IBM version is not the same as the ANSI version or the SYBASE version.

Despite adopting a less than optimal standard, relational databases will grow tremendously, predicted Codd. "It will be just like when Fortran was introduced and the market for computers in engineering and science mushroomed," he said. ■



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BY PRESTON GRALLA

Special to MacWEEK

A young man in Hong Kong sits in front of his Macintosh, puts the finishing touches on a newsletter and several data sheets created for his high-tech employers in the United States, and with a push of a few buttons starts his work on a journey that will reach halfway around the world.

It is sent over local phone lines, beamed off a satellite and finally reaches its destination in Santa Clara, Calif., where it is received, printed on a LaserWriter and quickly sent to the mother office.

A little closer to home, an executive vice president of a corporation in the Midwest waits until the last minute to get the most up-to-the-minute data for a slide show he's preparing for a board meeting the next morning. As the final numbers come in, he types them onto his Mac screen, adjusts bar and pie graphs and, finally satisfied, sends the graphs by modem to an "imaging center" where high-quality slides are prepared and shipped back to him early the next day, in time to make the all-important conference.

These are just two examples of a new way in which Macintoshes are being used in the corporate world. Prodded by the graphics capabilities of the Mac and the acceptance of the machines into the corporate world, service bureaus have begun springing up that take Mac files from remote sites and turn them into high-quality output such as 35mm slides or into typeset and near-typeset documents.

In some cases, not only quality but also the ability to distribute the material is sold. A newsletter, for example, can be created in one location and sent to a single bureau, which can beam it to dozens of sites around the country — or the world — to be locally printed and disseminated.

The bureaus answer a growing need among corporate users of Macs. Although the Mac is a powerful graphics machine, until now it has been very difficult and expensive to get 35mm slides and other sophisticated output that were

of high enough quality for business presentations. In addition, while the machine is ideally suited for desktop publishing, the problems associated with producing, printing and distributing newsletters have plagued some users.

The new services are national and even international in scope because electronic files can be sent and read anywhere in the world.

Autographix of Waltham, Mass., has been in the business of producing high-quality output for presentation graphics for several years. But until now the firm has not provided its services to Macintosh users. Ironically, the firm's first product was a graphics controller board for the first generation of Apple computers. Since then, however, Autographix has focused more on the IBM world, providing output services for PC graphics as well as for the workstations it sells.

John Donnelly, vice president of marketing, said the company decided to provide its services to Mac users because of what he sees as a burgeoning demand for high-quality output.

"Obviously, the Macintosh is an attractive product from a graphics point of view," he said. "Many people are buying it because of their interest in the graphics side of life."

He claims that 1 billion slides are created every year on IBM PCs. While he doesn't expect the Mac world to match that number right away, he said, "People with Macs have more of a graphics mindset, so I expect there to be more slides made per machine."

Overnight graphics

Autographix signed a deal with Cricket Software of Malvern, Pa., that will allow users of Cricket's graphics software products to create graphics and send them via modem to "imaging centers" that will run out the graphics and send them to the user the following morning. Donnelly noted that the firm has the ability to create 35mm slides as well as a variety of other kinds of high-quality output, including color thermal prints, laser prints and 8-by-10-inch color prints, suitable for presentation graphics.

Donnelly said that when a Macintosh user

is finished producing his graphics with Cricket's software, he hits a menu button that prompts him to answer questions about the type of output desired, the number of slides required, and the user's name and address. The whole "packet" is sent off via modem to an Autographix center, where it will be output and sent back to the user.

He noted that such presentation graphics are growing more important in the corporate world.

"People have begun to realize that visual aids increase the effectiveness of a presentation by 50 percent or more," he said. "Because of this, more people are using them. I expect the trend will continue."

He said he also expects that Mac graphics workstations will be increasingly connected to networks. When someone is finished with the raw data for presentation graphics, he said, that information will be sent to the workstation, where an artist will turn it into a work of art and transmit it to Auto-graphix.

The Autographix service is scheduled to be available in November.

By signing a pact with Autographix, Cricket Software agreed there is more of a need for the creation of slides and other high-quality output.

Carol Clyde, Cricket's marketing relations manager, said that "anyone with an idea to sell can use a presentation to sell it — and they get better results that way."

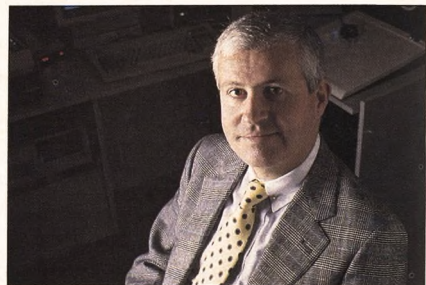
Presentation slides

She noted that the equipment needed to produce high-quality slides is often beyond the

pocketbook of most users. Because of this, she said, the Autographix service "has such obvious benefits. People without film recorders can have slides ready the next morning at a minimum cost."

Clyde also said that currently not all output produced using Cricket software can be run out as slides. Since Cricket Draw produces PostScript files, she said, it cannot work with film recorders. Cricket is working on a driver to remedy that problem.

The company, she added, also is readying Cricket Presents..., which will be able to import files from the firm's other software, put



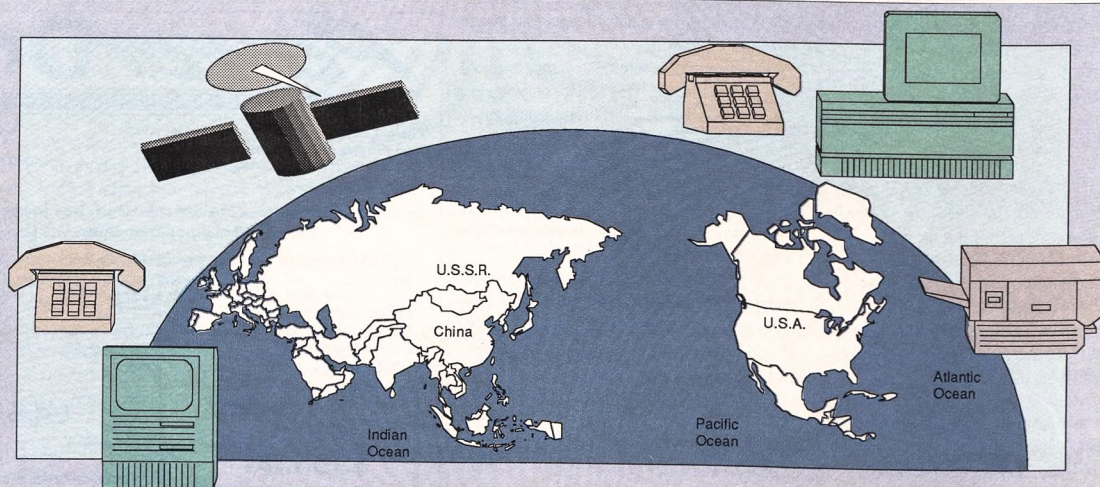
Both Bob Batty of CompuFilm, top, and John Donnelly of Autographix say many people interested in producing graphics have turned to the Mac.

together a presentation and send it out to Autographix, where it can be run out as film.

CompuFilm of San Francisco will offer a similar service starting in January. Like Autographix, the firm started out producing slides for IBM PCs. But then the company found that "major corporations have more Macs than we ever expected," said CompuFilm's Bob Batty.

MAC GOES WORLDWIDE

Service bureaus are springing up to take Macintosh files from remote sites throughout the world and turn them into high-quality output such as 35mm slides or typeset and near-typeset documents. A Mac user in any part of the world can create a document and send it over phone lines and beam it off a satellite to a service bureau in another part of the world for professional output.



"We talked to a lot of large companies that we assumed were all 'blue' and we found Macs in the creative, research and scientific departments. People who put documents together have moved to a Mac environment."

CompuFilm's service differs from Auto-graphix's. Rather than send graphics by modem, users send disks via Federal Express to CompuFilm, where the data is turned into slides or prints and sent back.

Furthermore, the user is not bound to software from any one vendor. As long as the software works with Color QuickDraw, it can be turned into slides. This means, said Batty, that virtually "anything you can put on a Mac screen" can be turned into slides.

He added that CompuFilm will eventually come out with a modem service like Auto-graphix's. The most important problem with sending images by modem, he said, is that "until multitasking is truly available, it ties up the machine for too long. An image can take up from 5,000 to 10,000 bytes. If you send 20 slides, that can be an hour of modem time."

International printing services

Slide-creation firms are not the only kind of service bureaus that have begun to focus on the Macintosh users. A unique international printing service is now based around the Mac. Another well-known fast-printing franchise has begun Macintosh-based services as well.

AlphaGraphics Print Shops of the Future, a Tucson, Ariz.-based graphics and printing company with 280 franchise locations, provides one of the most comprehensive networks of services for Mac users. (See related story.) Each franchise has a network of Macs, where users can walk in and put together a publication using either Aldus' PageMaker or AlphaGraphics' proprietary software. In addition, the firm has other proprietary software that eases the creation of business forms, letterheads and other stationery. Scanners are on site as well.

When the work is complete, the shop not only runs out the type on a laser printer, it also prints the job. Furthermore, the work can be sent through the firm's communications network to any other AlphaGraphics franchise, where it can be printed and distributed.

The firm also prepares custom binders and folders, continuous letterheads and 35mm color slides from Mac-created files. More importantly, Mac owners can link their offices directly to an AlphaGraphics franchise and be hooked into the chain's printing and communications network.

Rodger Ford, AlphaGraphics' founder and CEO, said, "Sophisticated Mac users could simply link to us and from their desks tell us exactly what they wanted printed."

He said that while many small firms use the service, large corporations have begun turning to AlphaGraphics as well, particularly for its communications network.

As an example, he cited a Geneva, Switzerland-based high-technology firm that needed a way to send a large number of documents from Switzerland to the annual COMDEX computer show in Las Vegas. The firm, he said, created the documents in Geneva and sent them over the AlphaGraphics network to a California AlphaGraphics franchise, where they were

printed and shipped to Las Vegas.

The PIP Printing fast-printing franchises have begun using the Macs as well, although in a different way. The company will use PageMaker and Macintoshes for internal typesetting chores. David Freed, PIP's director of MIS, said that in certain cases, users could transmit

their Mac files to a PIP franchise, where it would be printed.

All these services provide ways for Mac users to extend the power and sophistication of their computers. With them, one no longer needs to own costly equipment to get color slides quickly or expensive printing

equipment and communication networks to send newsletters to remote sites. These services should certainly make it easier for Mac users to thrive in the corporate world — or to quickly create output that matches what they see on their screen without buying special equipment. ■

AlphaGraphics brings high tech to quick printing

AlphaGraphics Print Shops of the Future has used the Macintosh to bring high technology to the quick-printing industry, a business that in the past had a decidedly low-tech feel to it.

Rodger Ford, AlphaGraphics' founder and CEO, first thought of offering desktop publishing services to his customers in 1979, when Xerox came out with a laser printer and a new line of computers. Ford, who had been a Xerox sales manager, was fully aware of the publishing power of computers. While Xerox's price tag for the printer was too high at the time, Ford began planning for a national self-service publishing network. His company became a beta tester for the Apple LaserWriter, and when it became public, he based the self-publishing concept on the machine.

AlphaGraphics, a chain based in Tucson, Ariz., initially offered customers terminals where they could lay out their own newsletters and business forms. Eventually, the chain expanded into AlphaLink, a telecommunications network that allows users to send their documents to AlphaGraphics franchises around the world.

Ford said he built the network around the Mac "because it's easy to use; it tells the story in pictures. Call it a video arcade for adults."

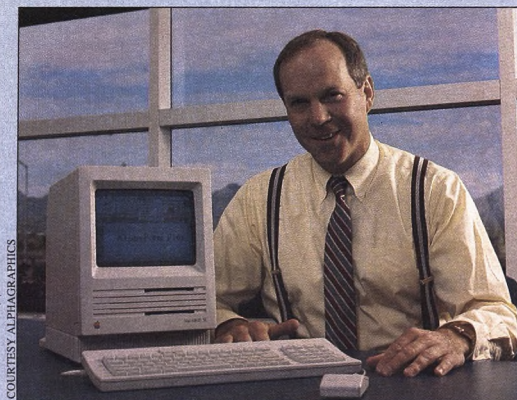
The satellite network is used in a variety of ways. For example, Ford said an AlphaGraphics customer based in Los Angeles sends a

one city drafted a document, he said, and sent it to their counterparts over AlphaLink, who amended it. The document was sent back and forth and changed several times during the negotiations.

Furlong said when the self-service concept was first discussed, he expected that secretaries would use it. "But what we've found is that mid- to upper-level executives are coming in and doing the work. In most cases they're producing something that's very personal to them and they want to create it themselves."

While AlphaGraphics may revolutionize the quick-printing industry, Ford is not resting on his laurels but looking toward the future. Saying the Mac II is still "a little buggy," he hopes to introduce products based on it once those bugs are worked out. AlphaGraphics will soon have proprietary software for its customers similar to Interleaf's page layout software that he claims will be more powerful than Aldus' PageMaker. Finally, as computers gain power, he said he will compile a database of information and arti-

cles that customers can use in creating their newsletters. "Small publications can use it to get information quicker and put the wisdom of the world into their newsletters. We plan to be," he said, "the UPI for the small publisher." — By Preston Gralla



AlphaGraphics' Rodger Ford: "We plan to be the UPI for the small publisher."

weekly newsletter over AlphaLink to Hawaii, where it is printed and distributed locally. Larry Furlong, owner of two franchises in Phoenix, Ariz., said that law firms in Phoenix and Houston used the network in negotiating a merger between two corporations. Lawyers at

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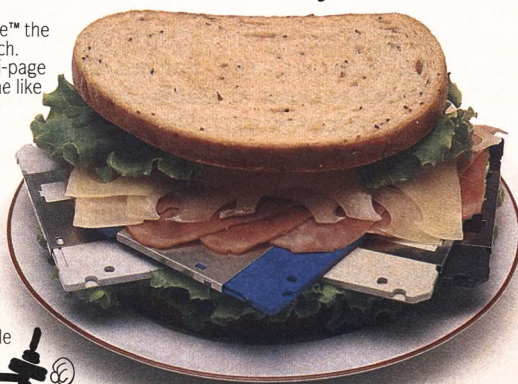
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Kroy refits copy centers with Macs

BY CLAIR WHITMER

MacWEEK Staff

SCOTTSDALE, Ariz. — The electronic media has poked its digitized head into more than one company where mechanics have traditionally reigned. Kroy Inc. is the newest example of the phenomenon.

Kroy of Scottsdale, Ariz., has grown comfortable on the sales of its mechanical lettering machines, and that division is still one of its major limbs. But recently, Kroy executives decided the time has come for an infusion of new blood from a fresher technology.

The technology they chose was the Macintosh.

"Kroy as a company has seen the mechanical lettering market deteriorate since the introduction of the microcomputer. Every product has a life cycle," said Randy Bailey, advertising manager for Kroy.

And as far as text management and publishing goes, mechanical lettering machines are definitely in their seventh age. This fact didn't do well for another division of Kroy's

business, its copy centers.

Recently, the company began refitting its seven copy centers with systems based on the Macintosh SE. The centers also use Abaton scanners, projection machinery, and Microsoft's PowerPoint and Aldus' PageMaker software to complete what Kroy calls its "desktop presentation centers."

The idea behind that new buzzword is to provide executives with a solution for preparing their presentations, complete with slides, speakers' notes and bound handouts, colored with Kroy Kolor if necessary.

"We think that appeals more to the common man than typesetting services. It's very important that we embrace the new technology and even leapfrog it," said John Glitsos, Kroy vice president in charge of the copy centers, the new sign division and new technologies.

The company hopes to appeal to executives who don't have a desktop presentation system, don't know how to use one or don't have time to learn.

See KROY, Page 15



John Glitsos: "It's very important that we embrace the new technology and even leapfrog it."

Portal's global strategy for on-line market

BY JON SWARTZ

MacWEEK Staff

CUPERTINO, Calif. — Tiny Portal Communications Co. thinks that it's onto something big in the on-line communications market.

Last month the Cupertino, Calif., company lowered the price of its on-line communications service, the Portal System, to \$10 per month. Comparable service from competitors CompuServe and Genie costs \$12.50 per hour.

Co-founder John Little said the service, which supports Macintoshes, IBM PCs and Digital Equipment Corp. computers, marks the beginning of an industry trend toward low-cost on-line communications. "The potential market is limitless," he said.

Then again, Portal's founders always had big dreams. The three-year-old company literally started at the top when co-founders Little and Phil Sih met on the 110th floor of New York's World Trade Center. "No garage for this start-up," Little said, joking.

Since being incorporated in May 1985, Portal has added thousands of users, although neither Sih nor Little would say how many.

However, this much is known: Portal has established gateways to approximately 80 networks in 30 to 40 countries and plans to provide on-line service to the 400,000-member Sierra Club next year.

But Portal is interested in small businesses like Vidocq, a San Jose, Calif., detective agency, and individual users who otherwise couldn't afford on-line communications.

"CompuServe and Genie dominate an established portion of the market," Sih said. "But we see ourselves surpassing them in the

See PORTAL, Page 15

Stock market dive hits computer industry investors

BY RUSTY WESTON

MacWEEK Staff

MOUNTAIN VIEW, Calif. — Imagine you work for a stellar high-tech company. It reports record earnings, but suddenly the 200 shares of stock you bought last year is worth 20 percent less.

So, you won't buy a new Saab after all. But perhaps it's more serious than that.

If a prolonged bear market follows last week's stock market collapse, it would pose a crisis to thousands of employees in high-tech firms across the United States that have more than an emotional stake in their careers.

Most high-tech companies offer discount stock-purchase plans for employees. A simple axiom applies: If you have faith in your company, you buy its stock. So, when the bottom seemed to drop out of the market recently, stock-market headliners like Apple, Lotus, Ashton-Tate, Sun Microsystems and Microsoft lost more than a little luster.

"When people walk out the door tonight to go home, they won't walk close to the build-

ing," said Greg Jarboe, Lotus' director of corporate communications. "We take this in stride along with hurricanes, typhoons, earthquakes and other natural phenomena.

"What's totally ironic is we announced record earnings today (Oct. 19), so whatever is going on out there in the greater world is something that we don't think we're participating

"We announced record earnings today (Oct. 19), so whatever is going on out there in the greater world is something that we don't think we're participating in."

in," Jarboe said. "I guess our stock is down 3 or 4 points today. It's a weird market out there. Microsoft is down 12."

"It's a big topic of discussion here," said Brad Stevens, Ashton-Tate's manager of cor-

porate communications. "We lost 6 points; this is the worst so far."

"It's kind of funny that most people make jokes about it," said an Apple engineer after the stock plunged 15 points in one week. "Considering how much money people have made over the past two years, it's just one of those things. I think people have enough confidence that the stock will go back up. Is this company really worth that much less than it was on Friday (Oct. 16)?"

At one point, Apple dropped 22 points below its post-split 1987 high of 59.

On Oct. 16 the market dropped 108 points, hitting the major computer stocks hard. No one jumped out of a window, but no one jumped for joy, either. On Monday, Oct. 19, people turned philosophical while they sold, driving the market down 508 points.

The employees were trying not to take the market rout personally. Said one Microsoft manager: "It doesn't matter, really, as long as the stock bounces back before 2000 — when I send my kid to college." ■

Leading software developers' revenues soar despite market plunge

BY RUSTY WESTON

MacWEEK Staff

It was a bad day for good news. The Persian Gulf was in turmoil. The stock market practically crashed.

The fact that the two leading software companies in the world had posted record \$100-million quarters was easily overlooked. For the first time in recent months, the newly intensified rivalry between Microsoft Corp. of Redmond, Wash., and Lotus Development Corp. of Cambridge, Mass., seemed a moot point.

Despite sterling report cards, both high-profile companies lost significant ground amid panic selling last week on Wall Street. On Oct. 19, the day the Dow plunged 508 points, Lotus dropped \$19.50 per share, closing at \$45.25; Microsoft fell \$6 to \$26.25 a share.

It could have been worse, of course. The two leading software developers actually fared well compared with hardware counterparts IBM Corp. of Armonk, N.Y., and Digital Equipment Corp. of Maynard, Mass. IBM lost \$31.75 and DEC slipped \$42.25 per share.

Microsoft reported fiscal 1988 first-quarter revenue of \$102.6 million, an increase of 54 percent from \$66.8 million in the same period last year. Net income for the quarter ended Sept. 30 was \$21.3 million, up 34 percent from \$15.8 million in the same quarter last year. Earnings per share were 38 cents, compared with 29 cents per share a year ago.

It was the eighth consecutive record quarter for Microsoft.

"As indicated two weeks ago, strong retail See EARNINGS, Page 14

EARNINGS

Continued from Page 13

and OEM revenues worldwide contributed to our positive results," Frank Gaudette, vice president and chief financial officer for Microsoft, said in a prepared statement. "Financial performance was strong across all channels of distribution and product groups."

Lotus' revenue from the third quarter of fiscal 1987 jumped 54 percent to \$101.2 million from \$65.6 million in the same period a year ago. Net income was \$19.1 million, up 101

percent, compared with the same quarter last year, when \$9.5 million was reported.

"The third quarter saw unprecedented demand for our core spreadsheet products in both domestic and international markets," said Jim P. Manzi, Lotus president and CEO. He added that the quarter marked record sales for 1-2-3. Lotus has announced that 1-2-3 for the Macintosh probably will be available in late 1988.

Microsoft also plans to release major new

products for the Mac and PC after Jan. 1 that are expected to boost sales even further.

Microsoft has announced it will release PC Excel, its popular spreadsheet program, and OS/2, the new IBM operating system.

"The big are getting bigger and it's getting tougher for the small software companies," said Darrell Boyle of Trailblazer Consultants of Saratoga, Calif. "With a series of mergers and acquisitions at the low end, it shows signs of a maturing marketplace." ■

CALENDAR

NOVEMBER

9-13 — Advanced Systems Analysis (San Francisco)
This five-day course is designed to show experienced systems analysts how to break away from a "bits and bytes" perspective and view operations from a business point of view. The program is aimed at systems analysts, lead programmers, project leaders and executives involved in systems-related assignments, focusing on strengthening analytical skills and techniques for systems analysis and design. Contact: Charles D. Black at the Association for Systems Management at (415) 4288-4786.

9-12 — NCGA Mapping & Geography Information Systems (San Diego)
Sponsored by the National Computer Graphics Association, the conference and exposition will highlight automated mapping and geographic information systems. More than 25 vendors are expected to exhibit. The conference portion will be divided into three program areas: automated mapping/facilities management (AM/FM), geographic information systems (GIS) and energy mapping. Contact: Bob Cramblitt or Holly Siprelle at (703) 698-9600.

11-13 — Long Island Apple Expo (Plainview, N.Y.)
Guy Kawasaki, former Apple software development chief, will be the keynote speaker at this three-day conference aimed at business and education users. A partial list of participants include Cricket Software, Adobe Systems Inc., WordPerfect Corp., Ashton-Tate, Microsoft Corp. and Interleaf Inc. Continuous hands-on workshops, educational applications of the Apple II and IIGS, and seminars by Apple specialists for educators of kindergarten through 12th grade will be provided by Apple. Contact: Janet Box at (516) 249-3366.

16-17 — Datagram 1987 Electronic Publishing Conference (Bedford, Mass.)
Conference to focus on "Unlocking the Market — the Acceptance Factor." Panel discussions will include topics such as adapting technology to the publishing process, desktop publishing, office systems, dedicated publishing, strategic system architectures for electronic publishing and page-description language standards. Contact: Dataquest at (408) 971-9000, ext. 501.

19-22 — imPACT! '87 (Hong Kong)
Jointly sponsored by The Seybold Group and ProjectAsia, the event will focus on the Asian Pacific Rim market area. It will include a four-day Seybold Seminar-style conference and a major equipment exposition. Exhibitors will represent the electronic publishing market from the United States, Europe, Japan and other Pacific Rim countries. There will be discussions of the latest publishing technology and software piracy and what to do about it. Contact: Jonathan W. Seybold at (213) 457-4704.

Send calendar events to: Clair Whitmer, MacWEEK Calendar, 525 Brannan St., San Francisco, Calif. 94107.



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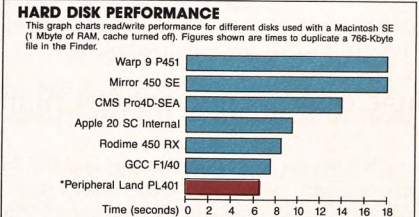
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KROY

Continued from Page 13

"A user may have a Mac in his building but may not know how to use it attractively. Our people have that expertise," Glitsos said.

The company's first new technology product didn't happen to show any particular bias towards the Macintosh, even though "within Kroy, there are Macs everywhere," Bailey said. That product was the Kroy Kolor sheets and processor, a heat-based system for transferring color to laser printer or photocopier output.

Recently, the company started priming new additions to that system, and this time the software involved is Macintosh-specific. The first product, though Kroy executives hint at more, is SignXpress, designed to create architectural signs.

The program was written by Glitsos to create architectural signs, which include everything from lobby directories to desk bars. The company has worked with a paper mill to develop a card stock that can be used in laser printers. In conjunction with Kroy's series of

Glitsos estimated that the architectural signs comprise a half-billion-dollar industry "not dominated by anyone since they're mostly 'mom and pop' operations."

wooden, metal, plastic and acrylic frames, sign templates and Kroy Kolor, the company is aiming to be an alternative to sign shops.

Kroy expects desk bars made with its products to be displayed on desks all over the country soon. Glitsos estimates that the architectural signs comprise a half-billion-dollar industry "not dominated by anyone since they're mostly 'mom and pop' operations."

He also predicted that his company's new sign products will significantly alter that market share in Kroy's favor.

Kroy also will be included in a point of purchase sign series to be released this quarter. Such signs would be used, for example, to display sale prices in department stores, replacing promotional aids that are now usually done with large and expensive mechanical presses.

Glitsos said the company's market research reveals a sales force excited by the possibility of a cheaper personal computer-based system and by the creativity it would allow.

"Creativity was the No. 1 cause of the excitement," said Glitsos. His favorite sales pitch includes the example of a sales sign for Izod shirts enhanced with the picture of the alligator.

Feedback from the marketplace has been encouraging so far, with the divisions of signs, copy centers and desktop presentation growing more than 40 percent in the last year. Glitsos said he expects them to catch up with or surpass the traditional lettering machine division within two or three years. Once again, progress has been profitable. ■

PORTAL

Continued from Page 13

larger future market."

Portal and AT&T recently connected 100 high schools nationwide to share information in a "global classroom."

"We think high school districts would be ideal users," Sih said. "We're also interested in any organization that wants to spread its ideology."

Whether the club is the environmental Sierra Club or a right-wing political

organization doesn't matter, according to Sih.

"We are not editors; we are carriers," he said. "We can't control voices, but [we can] try to present an atmosphere of political tolerance and an equal force."

Little and Sih said Portal is creating a niche in the on-line communications market for users who want a low-cost, flat-rate local service.

Little, who designed Portal System, said proprietary developments in its communications software make it cheaper than its competitors, who rely on expensive computers, old software and high operating costs.

The Portal System offers customer support, user-group communications, electronic bulletin boards, advertising and information distribution.

Because Portal is connected to other networks, including Usenet, an international conferencing network, and to UUCP, ARPA, BIT-NET and other mail networks, it is more flexible than CompuServe and Genie, Sih said.

Portal can be reached by modem for information or on-line sign up at (408) 725-0561 (300/1,200 bps) or (408) 725-0569 (2,400 bps) or by connection to the Telenet public data network or by telephone at (408) 973-9111. ■

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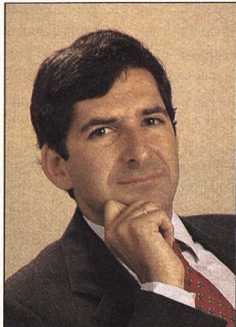
Rental upsets balance between copyright owners and users

BY KEN WASCH
Special to MacWEEK

The Software Publishers Association does not believe software rental is the way to help consumers purchase the programs that best meet their needs. As in any industry, software firms must balance their need to survive (read: make a profit) with their customers' requests for reasonably priced and well-supported products. The rental of software upsets the balance of interest between copyright owners and copyright users.

Advocates of software rental claim renting is the only way users can truly know what they are getting. But all too often, rentals result in illegal copying. Since the only justification for software rental is software preview, the satisfaction of that need through other means would obviate the rationale for storefront or mail-order rental operations.

The software retailer is the first point of contact for most software purchasers. Users deserve and should demand a knowledgeable and responsive retail staff that can demonstrate the capabilities of competing software packages. Many retailers also permit the user to preview any software package right in the store. For example, Egghead Software carries nearly 2,000



Ken Wasch

COURTESY SOFTWARE PUBLISHERS

titles. You can break open the shrink-wrap on any title and try it out in the store. Egghead's policy of ensuring that users are well-informed decision makers has become an important part of its service. Other retailers are following suit.

Another means of providing customers with hands-on exposure is through demonstration disks or crippled software. A demo disk simply shows you the features of the program. A crippled disk is a copy of the actual program — minus some key feature, like the ability to save your work. These are inexpensive alternatives to assist the customer in selecting the right software for his or her needs.

Copying a program without the permission of the copyright holder is not only illegal, it also deprives the publisher and everyone else involved in software development, production and marketing of their legitimate income. This could be crippling to the industry — and to users who want the software industry to develop new and innovative applications.

The proliferation of software rental operations reflects an unfair tipping of the legitimate balance of interests toward copyright infringers. Some members of Congress apparently agree. The Computer Software Rental Act of 1987 was introduced in March by Patricia Schroeder, D-Colo. The bill parallels the record Rental Amendment Act of 1984 that prohibits renting audio recordings without permission of the copyright holder. The software rental bill recognizes what I have discussed: The legitimate interests of software consumers can be served without subjecting the software industry to widespread theft of its work.

Ken Wasch is executive director of the Washington, D.C.-based Software Publishers Association (SPA).

NO

Computer owners don't need to steal software

BY D.W. KINGSBURY
Special to MacWEEK

At Software Library, we feel it is quite presumptuous on the part of Congresswoman Patricia Schroeder, D-Colo., the Software Publishers Association or anyone else to say that software rental leads to theft. If a person spends \$2,000 to \$10,000 on a computer, is it logical that he or she would expect to steal the software that makes it perform? If you buy an automobile, would you expect to steal the gasoline to run it?

To reduce theft, we have made our signed "Membership Agreement" mandatory. It states that illegal copying of software is punishable by law. Our associates are and always have been instructed to avoid copying questions completely. We refer such questions to the publisher.

Computer users are not buying computers; they are buying productivity. They want productivity and they will pay for it, but they don't want to get ripped off in the process.

We believe that the rental of software is of benefit to all concerned for the following reasons:

Software rental helps publishers. Rentals help sell expensive programs. Whether customers have had a bad experience with software or not, they aren't willing to take "pot luck" with software that costs from \$300 up.



D.W. Kingsbury

CYNTHIA JOHNSON

Rentals help the small guy. Dealers, distributors and mail-order firms move products through channels of distribution. They naturally handle the products that move the best. Unfortunately, many publishers are left behind. There are some brilliant publishers out there who may not have the advertising dollars or the publicity to be recognized. We get the word out.

Software rental helps the user. There is too much software out there for the user to determine the proper package without some help. Software has become so sophisticated that the attributes of most software can't be discovered by reading an article or looking over someone's shoulder at a store. With our evaluation program, users can get first-hand information and determine exactly what will satisfy their needs.

Most software packages sell based on the amount of advertising and publicity they get. The programs that get reviewed are not necessarily what all users need. Software should sell based on its true merit, and evaluation of a rental program keeps the user from getting stuck with unwanted software.

Software rentals sell computers. Many of our customers have based their computer purchase wholly on one or more specific software packages, but they wouldn't have bought the machine had they been forced to buy the software to try out the computer.

Our parent corporation is the distributor for the math solving tool for the Mac, PowerMath. It is not copy protected. Do we rent it? — YOU BET! Has it hurt our sales? Would we rent it if it did? Our overall goal at Software Library — and I believe we represent the other major rental companies as well — is to give customers what they want: productivity.

D.W. Kingsbury is president of Software Library, a software rental company in Houston.

TO THE EDITOR

Defeating the larger screen/smaller type dilemma

I read with interest Steve Rosenthal's column "Visible Results" in the Oct. 6 issue. His problem concerning the larger screen/smaller type dilemma ("The same number of dots are packed into smaller spaces.") has a solution. He should check out MegaScreen Video Systems, which all maintain the WYSIWYG of the regular Macintosh.

We believe the one-to-one relationship between a Macintosh and its printer is sacred. When a user plans a printed line in 10-point type, he should be able view 10-point type — not 7 point. So we kept the dots per inch the same, allowing the Macintosh user accurate expectations about his final hard copy.

One problem that occurs with a large screen — whether or not the pixels are crammed into smaller spaces — is that the relative size of the overall screen to the fonts cause them to look smaller. They may be the exact same size, but on the large display, the user perceives shrinkage. It's the same thing as seeing anyone you know standing next to Hulk Hogan. Therefore, we also let the user beef up the size of the menus and cursor through the Control Panel options.

I believe Mr. Rosenthal also will find no lack of space if he will switch to a 19-inch landscape-format monitor, such as we offer. While single-page display monitors are excellent devices, power users desiring enough room for lots of menu items, Desk Accessories, fonts or simply the display of an A4 page need to consider something larger than 15-inch vertical screens.

And his mouse needn't "run its tail off." Special settings let you change the mouse speed so that it becomes "Super Mouse."

*Diane Wessling Scott, vice president of communications
MegaGraphics Inc., Canoga Park, Calif.*

A keyboard for the southpaws

I am writing to discuss a problem that I am sure faces a great number of Macintosh owners. As an owner of a Mac Plus, I have decided not to upgrade to an SE in the near future.

The reason is the keyboard. Like many Mac users, I am left-handed. The keyboard on the Plus is highly functional for me, especially with the occasional use of the optional data pad. The keyboards for the SE (and Mac II) are definitely frustrating. The numeric keys are on the wrong side and the entire keyboard does not feel right to the left-hander. Given that the keyboard for the SE and the II must be purchased separately, I suggest that Apple seriously consider putting out a keyboard for "the rest of us."

*Gerald B. Hughes, associate professor of sociology
Northern Arizona University, Flagstaff, Ariz.*

TV Guide on line

I much appreciate John Edwards' column, which keeps us up to date on what's available on line. Something I've always thought would have a good market, but which I haven't been able to find, is an on-line version of TV Guide. It would give completely up-to-date information and a little more detail than we usually get from TV Guide, perhaps via an optional zoom screen attached to an entry.

Of course, the first directory would have to let you pinpoint your geographical location, possibly by ZIP code. And there should be an option that would bring up more than one film critic's review of the late night movies.

*Michael Scriven, editor,
Wings for the Mind,
The Newsletter of the Apple University Consortium/Australia
Nedlands, Australia*

Send letters to MacWEEK, 525 Brannan St., San Francisco, Calif. 94107; or via MCI Mail to MacWEEK. Include your name, title, company name, address and phone number.

COMMUNICATING



John
Edwards

Dave Romano is a claims adjuster with a New York-based insurance company that happens to be blessed by the presence of a Mac-based local-area network.

On Jan. 16, the lights went out in Dave's cubicle. "That's OK," Dave said. "Businesses operated for hundreds of years without electric illumination. I'll work by candlelight."

On Feb. 27, the building's heating system failed. "No sweat," said Dave. "I'll put on mittens and keep warm by working harder."

On June 18, his department's LAN collapsed. Dave swooned. "A LAN-less life, even for a short spell, was just too awful to contemplate," he is reported to have told colleagues several months later.

Bill Ashwood, the department's LAN manager, found Dave draped over his Mac Plus, a mouse clasped tightly in his right hand. "Having both a network and a key employee go down at the same time is a terrible thing," Bill recalled with a sigh. "I felt a keen sense of failure that day."

As the popularity of Mac-based LANs increases, so do users' expectations about system reliability. In fact, many hard-core users working at sites with large numbers of Macs have come to regard LANs as one of the essential elements of life, which are food, water, sunshine and unfailing network access — not necessarily in that order, either.

Bill said: "Users have come to expect the same degree of reliability from a departmental network as they do from a public utility. Users get hooked on the network. When it goes down, they panic."

Since the June 18 meltdown, Bill has steadily worked redundancies into his network. "We're striving to make the system as fault-tolerant as possible," he said. "The day after the failure, we put in an order for a backup file server. Now, we're bolstering the system with battery power backups, line filters and backups of software and key peripherals. We've even ordered a bunch of new SEs to give to users when their machines fail."

But while redundancies play a critical role in network reliability, LAN managers also must be practitioners of the artistic science of gentle persuasion. In other words, managers spend a lot of time as nurse maids.

"You have to know how to handle users when disaster strikes," Bill said. "Whenever something bad happens, I feel like I'm an official with the Nuclear Regulatory Commission on the day a nuclear power plant blows its lid. I have to hold hands, explain what went wrong, make a report to the boss and, of course, try to get things back into working order."

Usually, the problem is straightforward.

Occasionally, though, finding a solution requires both subtlety and perseverance. "Take the June 18 incident, for example," said Bill. "When the entire network went down at once, we knew we had a major problem on our hands, probably with the file server. My first impulse was to call the vendor for service, which probably would have meant a system blackout of at least several hours. But by poking around on the server and discovering a faulty cable, we were able to get the network up and running again within three hours."

Bill also remembers the time the network's

LaserWriter suddenly quit. "The printer literally went up in a whiff of smoke and left several users with important documents stranded. We checked the connections, consulted the documentation and generally poked around. Finally, we found a small mouse, the flesh-and-blood kind, charbroiled near the printer's power supply. We carefully extricated the creature, ordered a replacement supply and had the printer back on line later that afternoon."

But sometimes the only rational answer to a network collapse is to do something irrational. Last August, the electronic-mail system on

Bill's LAN suddenly dumped all of its files, throwing the department further into chaos than is customary. To keep the users at bay during the time needed to place a backup on line, Bill raced past the users' cubicles shouting, "I'm Louis XIV, King of France! After me, the deluge!"

Nobody quite understood what Bill meant by that statement, but they didn't have much time to ponder his historic histrionics, either. The E-mail files were back in place a few minutes later and even the highly strung Dave Romano enjoyed a laugh. ■

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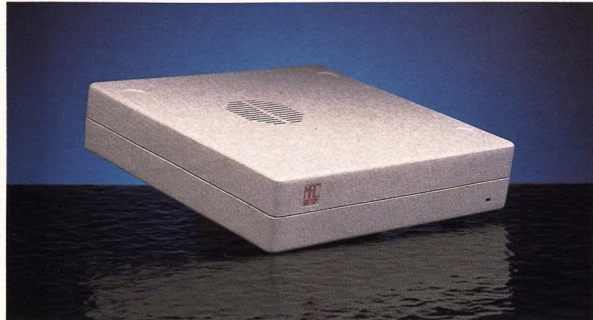
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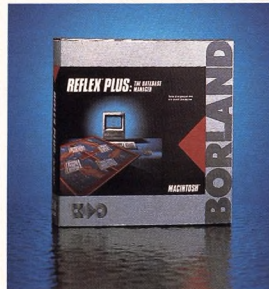
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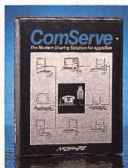
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I/O Design

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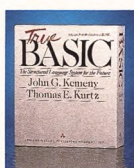
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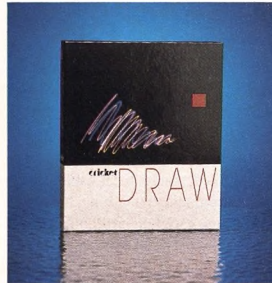
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SHEDDING LIGHT ON OPTICAL STORAGE

BY STEVE MICHEL
Special to MacWEEK

Promising vast amounts of storage, optical disk technology — including videodiscs; WORM drives; and CD-ROM units — are beginning to hit the Macintosh market in a big way. Analysts and pundits have been heralding optical storage for years, claiming that it will usher in a new era of information publishing, but when will it really happen? While it still might be premature to say so, it looks like things will start to come together soon.

Optical disk technology is different from the magnetic technology used in the hard disk drives prevalent in the computer market, and it is important to understand the differences.

When writing to a magnetic disk, the read/write head simply alters the magnetic properties of that disk. To change the data on a magnetic disk, the head has to change the magnetic property of the disk.

Optical disk technology, on the other hand, changes the disk physically. To record data, a laser burns a small hole or pit onto the disk. The head reads from the disk by shining a laser onto it, and the diffraction caused by the pits conveys the data. This means that once something has been written to an optical disk, it cannot be removed because the pits cannot be filled in.

While both an advantage and disadvantage, optical media does allow information to be

published in a way that prevents users from altering it. The information's integrity cannot be compromised. On the minus side, once you've put something on the disk, it cannot be changed. Furthermore, the device used to read the disk usually cannot be used to write to it. Special hardware is needed.

Typically, optical disks are not random-access devices like magnetic disks. Instead of placing information on the disc in a series of concentric bands, it is done in spiral tracks (as on a phonograph record). The read/write head cannot go directly to one sector on the disc, but must pass through all the others first. This results in slower access times: Most CD-ROMs, for example, have an average access time of approximately 135 milliseconds, while hard disks usually access data in about 25 to 65 milliseconds.

What this means is that optical disks are not likely to replace magnetic disks for most uses in the near future. For day-to-day storage, traditional hard disks probably will be used for some time. What optical media represents instead is a new means of publishing information. Their large capacity makes them ideal for publishing tools — large libraries of clip art, pictorial images, sounds and text databases such as encyclopedias.

Laser videodiscs

One of the first optical media available, laser

videodiscs have been around since the mid-1970s. Designed originally to be similar to videocassettes and a medium that Hollywood could use to publish movies, videodiscs never caught on. Consumers preferred videotape, which could record as well as play movies. The freeze-frame and random-access-like capabilities of videodiscs did not offer much to the movie viewer.

Videodiscs are still widely used for publishing pictorial information. A standard videodisc can store 108,000 visual frames. With this extraordinary storage capacity, a visual database for a specific topic can be created.

Apple's HyperCard has created new opportunities for working with videodiscs. Simultaneously with the introduction of HyperCard at the Mac Expo in Boston last August came the announcement of a series of products known as LaserCards from Optical Data Corp. of Florham Park, N.J., a leading videodisc manufacturer. Essentially, a LaserCard offers a means for HyperCard to control a videodisc player, allowing it to access particular frames on the disc and display them on a separate monitor. Optical Data is marketing discs concerning the earth, life and physical sciences. Each LaserCard comes with a videodisc and a HyperCard stack tailored to access that videodisc. If you have a videodisc player, then Optical Data will sell you the cable to connect it to the Macintosh; otherwise, they will sell

you the player, too. A separate monitor also is required.

The Voyager Co. of Los Angeles puts out another set of HyperCard/videodisc products. Its LaserGuide works with a videodisc available from the National Gallery of Art in Washington. This videodisc contains photos of the gallery's entire permanent collection. Together with HyperCard, you can personalize your museum tour by asking the HyperCard stack, for example, to display all the paintings by Renoir. Other discs Voyager plans to release will deal with the Apollo 17 mission to the moon, the works of Vincent Van Gogh and a visual library for biology. Like Optical Data, Voyager sells the videodisc player and connecting cable as well as the software.

Primarily, laser videodiscs present visual information as still frames, controlled by the computer and shown on a separate monitor. They do not generally contain textual information. For that, users will have to look to the other technologies.

WORM drives

A computer can write data to a WORM (write once, read many) drive. Once written to the disk, the data cannot be altered or removed. Typically, WORM drives, or optical disks, like the ones from LoDOWN of Scotts Valley, Calif., can hold 400 Mbytes of data.

Compared to magnetic media, this may seem like a vast amount of storage. But data can be written to a WORM drive only once. Suppose, for example, you make a change to a 1-Mbyte file on a WORM drive. Since the drive cannot modify that file, it must rewrite the entire file to disk, taking up another megabyte. If you edit this file once a day, even if it fails to grow in size, in a year you will have exhausted the disk's capacity. Because of the slower access times of these drives, the problem is compounded when you have several large or small files on a disk.

Even though WORM drives were not designed as day-to-day storage devices, they have their uses. In situations where an audit trail (a record of every change to a file) is required, a WORM drive is ideal. If someone inadvertently destroys some information in an important database, you can easily recover the file by loading yesterday's version and working with it. Some government and accounting applications require this type of audit trail, and WORM drives provide an attractive alternative to massive tape backup and auditing subsystems.

Companies that want to publish databases for in-house use also benefit from WORM drives. Technical manuals, for instance, can be easily copied to the WORM drive and distributed throughout a company rather than sent around on hard disks or masses of floppies.

Another use for WORM drives is in CD-ROM prototyping. Since magnetic disks of the

capacity required to hold all the information that a CD-ROM disc would use are fairly expensive, a WORM drive can hold the information while the CD-ROM disc is being designed. Often, that same WORM disk can be used to create a master of a CD-ROM disc when it is ready to be produced in quantity.

CD-ROM

The optical medium that gets the most attention is CD-ROM. As the "read-only" portion of the name implies, the information on a CD-ROM disc cannot be changed. Thus, it is a device for publishing and disseminating information.

CD-ROM has been heralded for a few good reasons. Standard CD-ROM discs are the same discs music lovers have been purchasing in huge quantities. In this case, what is good for the music industry is good for the computer industry. The same pressing plants being constructed for mass-produced music publishing will handle data publishing, thus contributing to lower production costs.

This available technology is another reason for the compact disc's eminence. A wealth of drives or players for music are priced less than \$300 — down from more than \$1,000 a few years ago, but because of the smaller market and the need for more sophisticated controller hardware, players for computers are priced in that \$1,000 neighborhood. Increasing demand,

however, should bring prices down.

To date, most CD-ROM applications for computers have been expensive databases, such as industry reports, Securities and Exchange Commission filing statements and high-ticket compendia of government databases. This is the leading edge of the CD-ROM market. The disc is inexpensive, but compiling the data is costly. Although this is not likely to change, what will probably change over the next year or so is the size of the market. Specialized databases have a small market, but general reference sources for the everyday user will gain a larger market, helping to bring down prices.

Increasing market acceptance

Two things, closely tied to one another, are necessary for the wide acceptance of CD-ROM in the personal computer market: inexpensive, standard players and a "breakthrough" software product.

Today, most users will not go out and buy a player. First, they are hard to find; second, they cost too much for what they deliver. The high price of the players is due to the small market, making it difficult for manufacturers to achieve economies of scale. Users also are afraid of changing standards; they wonder if the player they buy today will play next year's discs. So this is a tail-wagging-the-dog situation: Players will not become inexpensive until the market is

large enough, and the market will not be large enough until the players are inexpensive enough to have a significant perceived value.

This leads to the second necessary development: a "breakthrough" software product useful enough to make people buy both the player and the product. In the microcomputer world, the breakthrough products were Micropro International's WordStar and VisiCorp's VisiCalc, which caused many people to buy relatively inexpensive computers just to run them.

In the MS-DOS world, Microsoft Corp. of Redmond, Wash., is manufacturing a product that it expects will open the floodgates of compact disc acceptance. The product, Microsoft BookShelf, provides seven standard reference tools on a CD-ROM disc, along with memory-resident software to access those tools. The references include computerized versions of the "American Heritage Dictionary," the "Chicago Manual of Style," "Bartlett's Familiar Quotations," "The World Almanac & Book of Facts," "Roget's Thesaurus," and "Daniels' Business Information Sources," in addition to a spelling checker, ZIP code finder and a library of standard business forms.

BookShelf is a remarkable product, giving access to a wealth of information in seconds. Released in September 1987, Amdek Corp. of Schaumburg, Ill., is selling it separately for \$295 or bundling it with a CD player for \$1,195. It's too early to tell how well BookShelf is selling, but after using it for a few months, most writers and business professionals probably won't be able to live without it.

Waiting for the Mac

So far, no such product has appeared for the Macintosh, though a number are in the works. Several hardware manufacturers — such as

LoDOWN and Mac CD Labs of Portland, Ore. — are selling CD-ROM players. In this arena, the market seems to be waiting for a product from Apple, or for Apple to put its blessings on either the technology or a specific drive.

Among software manufacturers, Multi-Ad Services of Peoria, Ill., seems to have the largest installed base of CD-ROM products for the Mac. Multi-Ad's InHouse combines a desktop-publishing program with a specially

Specialized data bases have a small market, but general reference sources for the everyday user will gain a larger market, helping to bring down prices.

modified version of PictureBase from Symmetry Corp. of Mesa, Ariz. The CD-ROM disc contains a library of clip art, including corporate logos, as encapsulated PostScript files. With PictureBase, you can access the disc quickly and easily. For example, searching for "Coke" brings up all the corporate logos of Coca-Cola. InHouse is marketed with the LoDOWN version of the Toshiba CD-ROM drive.

What can users expect? In the short term, probably not much. In the long term, standards should start coming together for CD-ROM storage and access. Many developers are working on CD-ROM products that they hope users will decide they must have to get their work done. After the first such breakthrough product, look for the deluge. It will change the way we use and think about our computers. ■

HyperCard touted as ideal CD-ROM application

When HyperCard was announced at the Boston Mac Expo last August, Apple talked about the program's potential as a "front end" for CD-ROM technology.

CD-ROM storage requires at least two software components, which need not be separate software programs. The first component is the retrieval engine, the software that actually retrieves the data from the compact disc. Given the vast amounts of storage on a CD, coupled with its slow access time, the retrieval engine has the important function of facilitating fast access to an individual piece of information. The second software component is the user engine, which interacts with the user and the retrieval engine, processing the user's request for information, passing it to the retrieval engine and returning the information to the user.

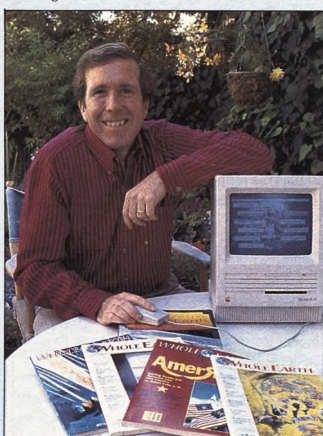
HyperCard, with its fast-searching algorithms and its extremely flexible user interface, can work as both these software components, but the program needs some work before it can be used for CD-ROM storage.

The current release of HyperCard doesn't access any stack that is on a locked volume because it wants to modify each stack that it works on. Since a CD-ROM disc appears as a

read-only, locked volume to the Mac, Apple will have to come up with a way around this problem.

In fact, a CD-ROM version of HyperCard is apparently in the works. While she would

Kevin Kelly, editor of the "Whole Earth Review," used HyperCard to create a prototype of a computerized product to be called the Whole Earth Learning Disk.



MIKE BLUMENSAADT

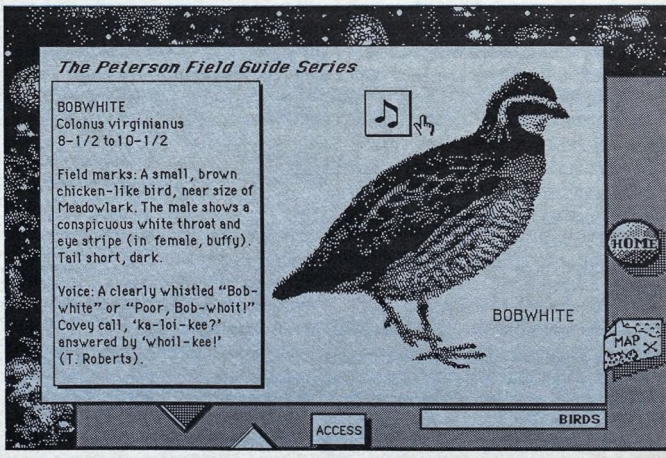
not comment on new versions of HyperCard, Moira Cullen, Apple's HyperCard evangelist said: "We view HyperCard as a front end [for CD-ROM] with a lot of potential. As a company, we are committed to both

technologies."

Developers are already working on HyperCard applications for CD-ROM. One such developer is the Point Foundation of Sausalito, Calif., publishers of the "Whole Earth Catalog" and the "Whole Earth Review." Kevin Kelly, editor of the "Whole Earth Review," has been working with HyperCard for some time and

See CD-ROM, Page 22

The Whole Earth Learning Disk that Whole Earth is planning to release on CD-ROM. This screen is taken from a review of the book/record, "Peterson's Field Guide to the Birds." If the button with the musical note is clicked, a recording of the bird's song is heard.



CD-ROM

Continued from Page 21

has created a prototype of a computerized product to be called the Whole Earth Learning Disk.

Essentially, the Whole Earth Learning Disk is a version of the Whole Earth Catalog based on HyperCard. It mixes graphics, text, sound and animation in a manner unique to the Macintosh and HyperCard.

The disk, like the catalog, is primarily a source of reviews. The screen shown on the

previous page is taken from a review of the book/record "Peterson's Field Guide to the Birds," and shows a sample of the information about the bobwhite. It includes a digitized image of the bird along with some information about it.

That's good enough, but what's really interesting is the small button above the bird with the musical note in it. Click on this button and you can hear the bird's call.

This illustrates a perfect use of the Macintosh

and HyperCard's ability to mix high-quality graphics with sound and a customized user interface.

Throughout the Learning Disk, certain elements are standard: the Home and Map buttons to the right of the bird are on every review card. The button labeled Access gives you information about the item being reviewed, including the author and publisher, where to get the item and so on. The triangles to the left of that button take you to the next or

previous cards.

The Whole Earth Learning Disk is not yet available. Currently, it takes up about 17 Mbytes of hard disk storage. Kelly foresees that it will be finished in mid-1988, and such things as pricing have not yet been set for it as a CD-ROM application. One thing is certain, however: It's an almost ideal application for HyperCard and CD-ROM, and points in the direction that CD-ROM is taking us. — *By Steve Michel.*



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High Sierra format has potential

All CD players are compatible.

They use the same mechanisms for storing information on disc as the players used in the music industry. However, some questions regarding how that data is actually formatted for information retrieval are still to be resolved.

In 1986, many of the leading computer and software companies met at Del Webb's High Sierra hotel at Lake Tahoe, Calif., to adopt an industry standard for encoding information on CDs. The standard they developed has become known as the High Sierra format.

In an industry in which standards have been anything but standard, the High Sierra format has potential. If most hardware and software companies adopted that standard, discs developed for use with one computer or program could be read by others. This is a chance for the industry to avoid some of the problems that occurred with 5.25-inch floppy disks in the early days, where one type of computer could use the same physical disk that was used by a different type of computer but could not read any information put onto the disk by the other machine.

As of today, the High Sierra format exists as a standard proposed to the National Standards Institute. Microsoft Corp. of Redmond, Wash., is supporting this standard with its Microsoft BookShelf product and its programming extensions that allow MS-DOS to work with CD players. Other developers seem to be rallying around, and many drive manufacturers include Microsoft's extensions with their CD players. Other software manufacturers, of course, are going their own way.

In the Macintosh world, things are not so clear. Although Apple was present at the High Sierra meetings, it has not yet indicated officially that it will support this standard. However, Apple has released to developers a set of extensions to the Mac's operating system that allow the Mac to work with CD-ROM players. Whether or not that's a stop-gap approach is not yet clear. Official word from Apple will probably come at the same time as an official announcement of a CD-ROM player. That announcement, rumored for some time, is now expected during the next six months. Until then, we will just have to wait and see. In the meantime, developers are using the CD-ROM extensions and hoping that's what Apple sticks with. — *By Steve Michel*

BY ROCHELLE GARNER

Special to MacWEEK

By now, we are all aware of the glories and convenience of a hard disk drive; no more continual swapping of floppy disks, no having to remember which floppy holds which file, no worries about generating files larger than 800 Kbytes.

Unfortunately, nothing in this world is perfect. With hard drives, we enter the world of head crashes and disks that fill up faster than envisioned. Maybe you need something that lets you continually add data without fear of filling your drive. Maybe you need removable media.

Until recently, the term "removable media" was synonymous with tape backup and, of course, standard floppy disks. In each case, the medium allowed you to store your data outside your computer, although neither was a viable alternative to having a fixed hard disk drive. Tape was suitable only for backup, and floppy disks were things you put up with until you could save enough money for a hard disk drive.

Times have changed. Floppy disk drives have taken on greater capacities and uses in the Macintosh market. Vendors are introducing drives based upon Bernoulli technology — a hybrid of floppy media and hard drive technology — in increasing numbers. And tape technology has undergone improvements in speed and capacity. As Bob Katzev, vice president of the market research firm Disk/Trend Inc. of Los Altos, Calif., puts it: "Storage is one of the most dynamic markets there is; things just happen in this market all the time."

Increased removable capacity

Take, for example, floppy drives. According to Katzev, the market will see 3.5-inch floppy disks that can hold 15 to 20 Mbytes of data "some time in the next year." While that's in the not-so-distant future, there are already "megafloppy" drives capable of holding approximately 10 Mbytes and Bernoulli-based cartridges that can hold 20 Mbytes. The newest technology to hit the market comes from the Rochester, N.Y., giant Kodak Corp.

Kodak, in conjunction with Data Technology Corp. of Santa Clara, Calif., has developed a megafloppy capable of storing approximately 10 Mbytes of data. The megafloppy drives use servo-embedded technology, in which head-positioning information is formatted on each track on the medium. This allows more tracks per inch than is possible with standard floppy disks. In addition, the head of the Kodak megafloppies remains in constant contact with the medium.

In contrast, drives based on the Bernoulli principle use a floppy-based medium that actually floats on a cushion of air. This differs from a hard drive, in which the head does the flying, not the medium. Using the Bernoulli approach, the head never touches the medium. Should a power failure occur, the medium actually drops away from the head. One major benefit is considerably less chance of head crashes, which occur when the head skids off the medium, often destroying the data with it.

The interesting thing about products based on both technologies is that each addresses the

WINDOW ON REMOVABLE MEDIA

BEST OF BOTH WORLDS

Hard disk storage; removable convenience



"The MegaDrive appealed to me because of the physical medium and because it's quite portable," said Frank Brooks (above), owner of F.C. Brooks and Co. "My main use is really to store specific data, either for backing up purposes or for lumping in one place." Below, SuperMac Technology's Dataframe combination hard disk drive and removable tape drive.



COURTESY SUPERMAC TECHNOLOGY

same market and promises the same benefits. Proponents of both megafloppy and Bernoulli technology tout these drives as viable alternatives to fixed hard disks and tape backup, as well as ideal tools for applications that require security or generate large files.

And people are using the drives in much the same way, principally as primary storage that doubles as a backup device. Most users

attracted to these products generate huge files, usually graphics-based, and want a way to separate the data by task. Most of these applications occur in CAD/CAM and desktop publishing, particularly operations that have numerous clients or publication needs.

Which technology is better?

Kathleen Yochum, marketing director for

equipment products in Kodak's mass-memory division, maintains that Kodak's technology holds the edge.

"Kodak preformats the disk at the factory so that the head is moving on the track," she said. "If it gets off track, the head gets knocked back on center. As a result, there's less chance of misalignment. We think that servo-embedded technology is the most reliable way to offer multiple megabytes on a flexible medium."

The number of vendors now offering systems that use Kodak megafloppies, including Jasmine Technologies Inc. of San Francisco; Peripheral Land Inc. of Fremont, Calif.; and NuData of Santa Clara, Calif., suggests that others agree. But questions remain. For one thing, transferring the Kodak technology to the Mac environment has proved troublesome for many vendors.

"There are a lot of bugs with this technology," said Eric Hertzog, NuData's director of marketing. "We can ship it, but it's not perfect, and we tell people that."

Mark James, a product manager at Jasmine, also acknowledged initial problems in readying that company's MegaDrive product, which lists for \$995.

"There were a lot of problems getting it out for the Macintosh. [SCSI] termination was a problem; the technology wasn't as fully terminated as the Mac needed. We pioneered the selectable SCSI switch, and we had problems putting that on these MegaDrives. There just were all kinds of little problems, but after a lot of changes, the drive is ready," James said.

A number of users are pleased with the results. "The MegaDrive appealed to me because of the physical medium and because it's quite portable," said Frank Brooks, owner of F.C. Brooks and Co. of Greenwich, Conn., whose business is the unlikely combination of investment banking and subcontract programming.

The MegaDrive is "very reliable and works fine; I haven't had any serious problems with it," Brooks said. "I use the MegaDrive primarily for backing up, using DiskFit (from Supermac Technology of Mountain View, Calif.), and also for sending large files in the mail. My main use is really to store specific data, either for backing up purposes or for lumping in one place. The big advantage is in backing up the larger hard drives. It has great appeal in the work-group environment."

"I keep clip art on the MegaDrive, and also use it to back up the hard drive," explained Carol Von Haden, owner of Blue Sky Graphics in San Francisco. "I wanted to set up different configurations of software so I wouldn't have to keep everything on the hard disk. Plus, I have a 300-dpi scanner, and you need a tremendous amount of memory when storing using TIFF (Tag Image File Format). Some of these files take more than 800K, so I would have had no way of backing them up, except to split files."

When asked why she chose the MegaDrive, Von Haden said: "I had heard that tape backups weren't reliable, so I had steered away from buying tape. It had seemed to me that 10 Mbytes was a nice size and it could be ran-

Continued on Page 24

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domly accessed so I could use it as a hard drive if I needed to. I had looked at Bernoulli, but I had heard from several people that Bernoulli technology has a high failure rate. So whether it was true, I believed it."

Bernoulli drives

Von Haden was not the only person to have heard reports of Bernoulli unreliability. When asked why he didn't consider a Bernoulli drive in his purchasing decision, Brooks said: "I never seriously considered the Bernoulli because I don't think of it as that solid a system."

Yet Bernoulli drives are being increasingly accepted in large installations, including government agencies, defense contractors and finance institutions. The U.S. Air Force, in fact, is currently testing the Bernoulli-type Totem drive from Bering Industries of Fremont, Calif., to see how well it withstands jostling and dirt during in-flight use.

"I was attracted to the Bering because its types of buyers tend to specify high reliability," said Ann Meyer, managing editor of Versatility, a magazine based in Austin, Texas,

that addresses CAD/CAM issues. "And I like the flexibility in being able to keep my software separate from my hard drive."

Meyer said she believes that Bernoulli drives gave her added flexibility: "I also keep a lot of data — 350 megabytes — and the Bernoulli lets me configure it for the task I'm doing. Having all 350 megabytes available at once isn't necessary, but having it in 20- or 40-megabyte pieces is nice."

"I think IOmega (developer of the Bernoulli drive) has a better technology than Kodak does, and the Bernoulli has twice the capacity and much faster access time," she said.

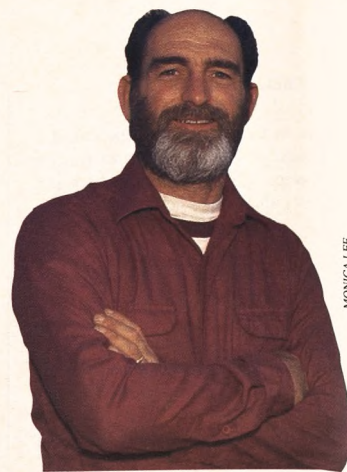
MicroMarketing of Albuquerque, N.M., one of the larger resellers of Bering's Totem drives in the country, had to work hard to forge a market for Mac Bernoulli drives. Robert Wall, owner of the company, said: "We were trying to get one a month out the door when we first started, and now we're selling at least one every two days. People love the Totem, and now others are hearing about it mostly from word of mouth. We do a lot of work with government agencies, which demand security, backup and support."

But still there was that persistent report of IOmega's Bernoulli Boxes — especially for the Macintosh — being unreliable. Michael Joseph, director of product marketing at IOmega in Roy, Utah, explained it this way: "When we first brought out our product for the Macintosh, the Mac was just a 128K machine. And we went through several iterations of the product, just like Apple. We had to go through a lot of growing in the marketplace. And from the customer standpoint, that's frustrating."

Joseph said that the reaction to current products is much more positive. "We do a user survey about six months out from the purchase. Right now 96.5 percent of all users say they would recommend the product," though that figure represents both MS-DOS and the Macintosh Bernoulli Box users, he said.

Bering also claims a high degree of reliability and satisfaction. According to Sandy Ostrau, marketing communications manager at Bering, the Totem drives have experienced a failure rate of 4 percent over a six-month period and a failure rate of only 2 percent in the past two months.

Now Supermac Technologies, which sells the Dataframe hard disk drive and Datastream



Terry Pennington, consultant: "The Infinity is the optimum backup method."

tape-backup system, has begun to offer a Bernoulli-based drive as well.

"We've had extremely good reliability with Bernoulli," said Steve Edelman, Supermac president. "You can practically run your bicycle over a Bernoulli cartridge and it will work at least once."

Continued on Page 25

Tape backup gains acceptance in Mac world

Using tape to back up data has long been the method of choice in the IBM world, and now it is gaining a toehold in the Macintosh market.

But do Mac owners benefit as much from tape systems as owners of MS-DOS systems?

"My personal opinion is that small tape devices (40 Mbytes or less) are inherently unreliable," said Mark James, product manager at Jasmine Technologies Inc. of San Francisco. "Very often, you can back up a drive and have major problems trying to restore. I'm just scared to death of small tapes."

David Rose, whose New York real estate office uses more than 50 Macs, had his run-in with the AST 2000 from AST Research Inc. of Irvine, Calif., a combination 20-Mbyte hard disk drive and 20-Mbyte tape backup unit. "The tape drive on the AST tended to be slow. It had a lot of problems formatting tapes and a lot of problems reading tapes. At the end, we weren't sure that we had something [backed up]," said Rose.

What this all means for the majority of Macintosh users who own 20- and 40-Mbyte drives is they may be better served by performing incremental backups on standard 3.5-inch floppy disks.

Still, disk drives are getting dramatically larger, with both Mirror Technologies of Hugo, Minn., and NuData of Santa Clara, Calif., offering gigabyte-size drives. And standard floppy disks are no longer practical for those capacities.

"We are facing an increasing reliance on mass, mass storage," said Dana Bonstrom, product manager at Mirror. "Less than a year ago, the notion of a gigabyte drive was something out of the 21st century. Now it's become a necessity by virtue of multi-user as well as data-intensive applications like CAD and Omnis 3 (from Blyth Software of San Mateo,

Calif.) coming into their own. And more sophisticated software, like HyperCard, also builds in a reliance on larger and more powerful devices."

Choosing the suitable tape backup device is no simple matter. For one thing, you should carefully examine your needs, then ascertain how much the backup/restore control software — which determines how easy to use and useful the tape device actually is — satisfies your requirements. For example, how easily can you select individual files for backing up or restoring? Can you restore individual files from an image backup? Can you schedule a series of unattended backups for different days of the week? These are only a few of the capabilities that can affect your backup device's utility.

"The ideal software would let people do unattended backups — both global and incremental — do an incremental backup of recently changed files and provide the ability to back up the incremental files minus the programs," said Troy Nightingale, a sales consultant with Alpine Computing in Orem, Utah. "If you can set those types of things, backing up will be a simple process. Unfortunately, I've yet to find one that really delivers everything I just said. Most claim they will or will shortly."

Nightingale also advises his clients on proper backup procedures: "For most of the more educated users, I recommend that they only back up their files and not the programs," he said. "They should do one global backup, then a series of incremental backups, then do a global in another two weeks. Of course, that will vary according to the amount of information they are adding to the system."

Mirror's Bonstrom recommends that people perform a global backup, which they should then put in a safe place. "From that point on, they should use a file-by-file procedure to back

up the whole drive and use that tape as their working copy."

Some people, however, have developed different backup strategies. Chris Haas, who works in the technical support department of SoftView Inc., a Mac software developer based in Camarillo, Calif., has to worry about protecting a huge Omnis 3 database on a network, yet he also must keep network downtime to a minimum.

"We do a global backup of the database from the Jasmine Direct Drive 80 onto a Dataframe hard drive. The Dataframe's a temporary storage so that we don't lose valuable time on the computer." Later, Haas backs up the Dataframe data onto a tape backup device from Relax Technology. "Despite the extra stage, we're saving time," said Haas.

Tape formats

Naturally, these backup strategies involve today's tape technologies. The three main formats currently available are: two from TEAC, the CT-500 (which has a 40-Mbyte capacity) and CT-600 (60-Mbyte capacity) cassette formats; and the 3M Co. DC-2000 format, which has variable capacities depending on the tape drive. But tape is undergoing as rapid a change as other media in the storage marketplace, with larger capacities available on newer digital audio tape (DAT) and 8mm videotape formats. How do the formats differ?

3M tapes are the most commonly used formats in the personal computer marketplace. The DC-2000, used by Apple for its 40-Mbyte tape drive, is a small-format, quarter-inch tape cartridge that can record data at fairly high densities. Cartridges, however, are relatively expensive — about \$25. The TEAC cassettes are slightly less durable than the 3M cassettes but are cheaper, running about \$15.

TEAC tapes are essentially audio cassettes arranged in tracks. A 40-Mbyte tape will have four tracks, while a 60-Mbyte tape has nine. In addition, the TEAC cassette uses a stationary

head, and moves the tape at high speed. In contrast, the new DAT format actually spins the head at high speeds and moves the tape slowly past the head. The result is higher recording densities. According to James, Jasmine is working on a 2-Gbyte tape unit using the DAT format that will fit in the palm of the hand.

But DAT recording is not particularly fast. One potential alternative is 8mm videotape. Alan Brunner, advanced development manager and co-founder of Jasmine, described that technology this way: "With 8mm videotape, the tape is moved at one-and-a-half inches per second, and the head moves across the tape at a five-degree angle, the equivalent of 150 inches per second. This approach will be more reliable than others because each swipe of the head records a data block, complete with error-correction code."

How will these new formats affect the personal computer tape backup market?

"The 8mm format, if it offers high performance and depending on how it's priced, could potentially displace the streamer tape, but people will have to be convinced that the reliability is there," said Bob Katzev, vice president of the market research firm Disk/Trend. "DAT could affect streamer tape the same way. But there's so much capacity, the big problem will be in managing the data."

Obviously, tape backup systems are undergoing dramatic advances because the market requires those improvements, which does not mean there isn't something available that will fit most of your backup needs. Just be sure to examine all the variables of the device's control software, what backup strategy you intend to follow and how easily the device will let you back up and restore your files.

James offers the last word on tape backup systems: "There are two kinds of happy tape users: the kind that never had to restore a tape and the kind that learned how to work around all the limitations."

—By Rochelle Garner

Continued from Page 24

Despite marketing the Datastream tape-backup system, Edelman said he doesn't see streaming tape as a mass-market product in the Macintosh world. "And honestly, for backing up drives under 60 megabytes, it's faster to back up with [standard] floppies, especially as most people only back up their changes. So what's the alternative? You can use some kind of removable mass storage: Bernoulli or the Kodak type disk," he said.

Edelman said he believes that Bernoulli technology has an edge over the Kodak

only bring on to the hard disk what I will use that day or that week," Pennington added.

Jason Meisels, Macintosh librarian of the Amateur Computer Group of the New Jersey Mac Users' Group, was one of the first people to use the Infinity. He was attracted to it as a medium for distributing shareware and public domain software. "We have about 160 megabytes to keep track of," said Meisels. "We felt the best way to get a program out to a user was in bulk format. The Bering drive was too expensive for most of our users, and the media for the Jasmine and Infinity II (Peripheral

Land's megafloppy-based drive) were too expensive for quantity."

Pricing for the media can be a consideration when choosing removable-media drives. A cartridge for the \$1,295 Infinity drive currently lists for \$18; a Bernoulli cartridge from Bering for its \$1,195 and \$1,495 single- and double-drive Totems lists for \$85; and Jasmine sells cartridges for its \$995 MegaDrive at three for \$110.

Meisels said: "Another thing that turned us on to the Infinity was having MS-DOS transfer capability, which I think will be an increasing

selling point to this drive. I recommend it for people who like to have a lot of software, but aren't willing to buy an 80-megabyte drive, being that prices are beyond most end users' wallets."

So what does it all mean to the user? Removable-media drives are available now and offer flexibility and security for users with specialized applications or needs. Figure out ahead of time how you intend to use the product, then try before you buy. And despite reports to the contrary, all technologies seem to be equally reliable, so you can buy in peace. ■

Removable-media drives offer flexibility and security for users with specialized applications or needs.

megafloppies: "We've chosen Bernoulli because it's faster and because you can get more storage on it. The 3.5-inch floppy disks creeping up in capacity will negate the need for Kodak."

Soft-shell floppies

Users, however, needn't limit their choices to either Kodak or Bernoulli technology in this market. Another contender in the battle of the high-density floppies is Peripheral Land's Infinity.

The Infinity floppy disk, which looks exactly like the 5.25-inch floppies so familiar in the IBM world, is the only disk discussed so far not encased in a hard plastic shell. It is also the only disk that can transfer PC/XT and PC/AT data onto a Macintosh while accommodating 10.6 Mbytes of data.

"The Infinity is the optimum backup method," asserted Terry Pennington, a marine designer and Macintosh consultant based in Berkeley, Calif. "Most of my clients are in desktop publishing, and they basically have a storage backlog. They want to keep a lot of fonts readily accessible, and since the Infinity works like a floppy, they can boot up and download at any time."

"I use it as my primary storage medium, and

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KEITH THOMPSON

Ann Meyer, managing editor of Versatility: "I keep a lot of data—350 megabytes—and the Bernoulli lets me configure it for the task I'm doing."



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CE's QuickKeys to success

QuickKeys 1.0

CE Software
801 73rd St.
Des Moines, Iowa
(515) 224-1995
Retail price: **\$99.95**

Strengths: Permits keyboard shortcuts for simple and complex Macintosh actions; easy to learn and use; gives a purpose to extended keyboards; supports third-party as well as all Apple keyboards.

Weaknesses: Somewhat high priced for a utility program; retrieving keystrokes from saved QuickKeys "sets" is awkward.

BY CARLOS A. WEBER, M.D.

Special to MacWEEK

If you've ever felt like committing rodenticide after pointing and clicking your way through one more dialog box, QuickKeys may be the antidote.

Most Macintosh users appreciate the consistency and transparency of the Mac's graphic interface. It's great to navigate around in a new program without having to memorize the manual first or to be able to come back to an application after two months and pick up where you left off. This would be impossible if programs didn't rely heavily on the Mac screen and mouse to provide instantaneous visual feedback to the user — in the words of Apple's Human Interface Guidelines, "See-and-point (instead of remember-and-type)."

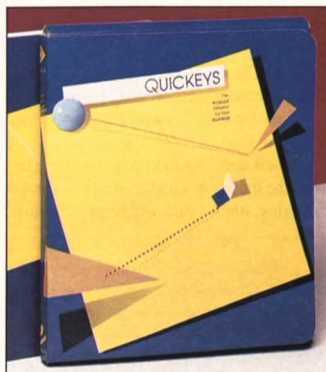
After doing something the first dozen times and getting the hang of it, however, many Mac users would be willing to trade transparency and visual feedback for efficiency and speed. QuickKeys, a keyboard enhancer from CE Software, is designed to help you do just that.

With QuickKeys, almost any mouse or keyboard action or series of actions can be assigned to a single keystroke. An "action" can be selecting a menu item, clicking the mouse and dragging, clicking on a dialog button, typing a word or phrase, opening a document, and many others. A "single keystroke" in QuickKeys means any single key, with or without any of the "modifier" keys — Shift, Option, Control and Command/Cloverleaf/Apple. Think of any series of repetitive actions you perform on your Macintosh — chances are QuickKeys can condense it into the press of a key.

A spreadsheet user could define a key to open the "Resume Excel" document. Once in Excel, another key could select a 3-by-3 array of cells, format it in bold, and outline it with a border. A technical writer might have a series of keys for commonly used but difficult-to-type phrases (up to 71 characters long). An often-used Desk Accessory might be honored with its own QuickKey.

Curly quotes

Perhaps one of the Mac's keys is in an awkward place. QuickKeys can put it somewhere else. A Dvorak devotee could even use QuickKeys to redefine the entire keyboard. Prefer typeset-style curly quotation marks to the



NEWELL COLOR

straight marks produced by the regular quote key? No more struggling with impossible-to-remember Option-bracket combinations — simply select QuickQuotes or Double QuickQuotes from QuickKeys' hierarchical Special menu, then press the quotation-mark key or any other key you want to produce the more elegant markings. Thereafter, whenever you type the assigned key, it will enter a left (opening) quotation mark if your previous action was a mouse click, a space or tab, or one of several other special characters. If the preceding entry was a regular letter or number, the same key will produce a right (closing) quotation.

Here's a slightly more complex example from my own Mac life. At least half a dozen times in the average day, I open a new text window in MPW, the Macintosh Programmer's Workshop. My first actions are invariably to change the font from the ghastly Monaco that MPW insists on to my own preference, New York 9, and to size the window so that it doesn't cover the entire screen. Without QuickKeys, this procedure requires five mouse actions. With QuickKeys, I now accomplish the same thing by hitting Control-n.

These examples are just the beginning. It's hard to believe anyone could imagine as many uses for a keystroke as programmer Donald Brown has included in this program. (Brown is the author of MockWrite, Borland International's original Mac Sidekick package, and other popular utilities.) Calling up FKeys; time- and date-stamping a document (in any of a variety of formats); scrolling up, down and sideways; clicking and dragging the mouse (from a fixed or relative position); moving to the beginning or end of a document; closing or zooming into a window; transferring to another application or document; even shutting down — the list goes on. You can define up to 100 "universal," always accessible keystrokes, and 100 more for each specific application.

One of the options on QuickKeys' Define menu, called Sequences, lets you build complex macros attached to a single key. First, you will need to make a keystroke assignment for each step in the procedure. Then Sequences lets you chain them together and add pauses if required. You may also include text strings within the procedure. As the manual suggests, you might use this feature to enter the title of a book you cite frequently, italicize it and then

return you to normal style.

Even with the Sequences command, QuickKeys is not necessarily a replacement for Tempo, the macro utility from Affinity Microsystems. CE's product can't record whole sequences in one step, as Tempo can, and it lacks the sophisticated looping and branching capabilities of that product. But most users probably don't require these high-end functions, and for other purposes QuickKeys has a number of advantages: It lets you remap any key, not just Option, Command and function key combinations; it doesn't take up Desk Accessory slots (Tempo takes two); its modular approach to building sequences, though perhaps tedious at first, makes it easier to edit and combine steps into different sequences; and unlike Tempo, it works with MultiFinder.

Fortunately for the user, Brown has done a good job of making a potentially bewildering program simple to use. To install QuickKeys, drag the 64-Kbyte QuickKeys file into your System folder. Do the same, if you wish, with DialogKeys, an accompanying utility that lets you respond to dialog-box buttons and boxes without using the mouse. If you are using a third-party keyboard from DataDesk International or Tangent Technologies, add one more small file from the QuickKeys disk, then reboot.

Thereafter (provided you are using System 4.1 or later) QuickKeys will appear in the Control Panel. (Technically, the program is a "cdev" resource.) Go to the Apple menu, invoke the Control Panel, choose QuickKeys from the scrolling icon list on the left and you're ready to define a new keystroke. Choose an action category from the Define menu that appears inside the Control Panel, then simply perform the action for which you want to create a shortcut. Finally, tell QuickKeys what keystroke to assign to the action. Once you close the Control Panel, your new keyboard assignments are instantly available.

The first section of the QuickKeys manual, titled "I Never Read Manuals," is all you need to start using QuickKeys. Whenever the program is active, a single keystroke also will call up an on-screen "quick reference card" listing all current QuickKeys combinations. If further help is needed, the rest of the manual is thor-

ough, clearly written and, most important, well-indexed. (With the same instructions given in several different chapters, it can get a bit boring, but you are not expected to read it cover to cover.) There's even a technical section for developers who want to make their programs cooperate with QuickKeys.

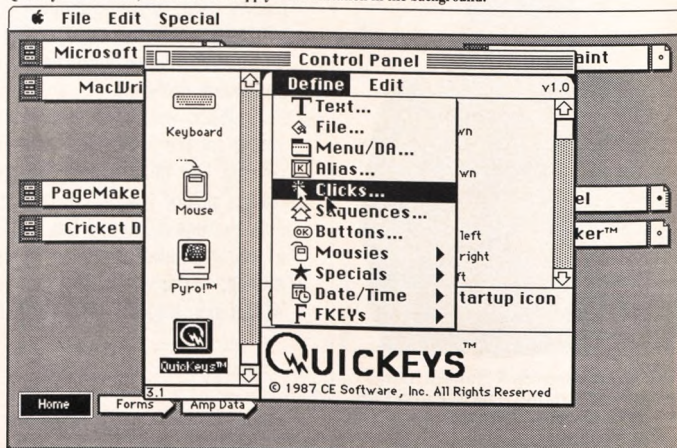
On the disk with QuickKeys and DialogKeys comes QuickAccess, an application which, among other things, lets you edit keystrokes, save sets of keystrokes to disk and print keyboard templates showing the keystrokes currently defined. Several sample QuickKeys files for all Mac keyboards are included as well as both universal (general purpose) keystroke sets and specialized sets for common applications like Excel, HyperCard and MacDraw.

QuickKeys is solid. I've been using it every day for a month on a Plus with System 4.1 and on a Mac II with MultiFinder and a prerelease System without encountering a bug. There are a few — very few — user interface peccadilloes, such as dialog boxes that don't seem to offer a way to cancel out. There are inconveniences: The inability to add just one or two predefined keystrokes from a disk file to the currently active set without replacing the whole set is the main one. And there are conflicts with the DiskTop INIT, part of another CE Software product, and with the demonstration version of QuickKeys posted on CompuServe and other bulletin boards. (CE has now added a warning notice to the QuickKeys package.) On the whole, though, QuickKeys is a well-crafted program that does what it sets out to do.

At \$99.95, QuickKeys costs as much as some applications. Is a humble utility program worth this much? If you own Apple's new Extended Keyboard (or one of the third-party big keyboards), the answer is almost certainly "yes." With QuickKeys you will finally be able to use those 15 keys at the top of the keyboard that you've been staring at for the past few months! Users of "normal" keyboards should strongly consider investing in QuickKeys, too. I find myself relying on it from the Mac Plus keyboard just as much as from the Mac II keyboard to streamline just about everything I do. You owe it to yourself and your Mac to check this one out. ■

Carlos A. Weber, M.D., surgeon and software developer, wrote FKey Manager.

QuickKeys' main menu, with Software Supply's PowerStation in the background.

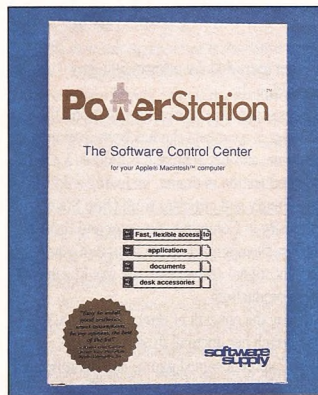


Plug into PowerStation to access files

PowerStation 1.1

Software Supply
599 N. Mathilda Ave., No. 210
Sunnyvale, Calif. 94086-3504
(408) 749-9311
List price: \$59.95

Strengths: Provides quick and easy access to regularly used applications, documents and Desk Accessories; fast return upon quitting applications; multi-"page" capabilities.
Weaknesses: Occasionally exhibits strange behavior in use with Desk Accessories; no flexibility in button design and layout; no color; minor problems with MultiFinder.



NEWELL COLOR

BY JACK HODGSON

Special to MacWEEK

The Finder — it's the most visible program on the Mac. To many it's what gives the Mac its "Desktop" identity. Yet it is a program that some users have been attempting to replace with smaller, faster or more easily customizable alternatives since the Mac first came out.

And the dilemma is getting steadily more acute. Although Apple has made the Finder faster over the years, it has not added any functions to help the user cope with the increasingly unmanageable folder hierarchies that come with larger hard disks.

PowerStation, a new product from Software Supply of Sunnyvale, Calif., is among the latest — and certainly the most successful — of the Finder substitutes. Unlike some compet-

ing entrants in this field, PowerStation does not attempt to duplicate every function of the Finder. For example, to copy a file, delete, rename or "Get Info," you will have to revert to the Finder or use a file-management Desk Accessory like DiskTop from CE Software of Des Moines, Iowa.

What PowerStation does offer is dramatically faster and easier access to the applications, documents and Desk Accessories you use regularly. You can launch what you need without all the folder fuss the Finder requires. And when you quit your application, you will be back at PowerStation, ready to go on to the next task, in one-third to one-half the time it takes the Finder to reconstruct its Desktop.

With PowerStation, you create a series of

on-screen buttons that with a single click launch an application program or any Desk Accessory installed in your system. It even works with accessories opened by Suitcase, the font and Desk Accessory access program also recently published by Software Supply. You also can assign buttons to data files — perhaps one to a PageMaker template you work with frequently, another to a spreadsheet you need to update every week and a third to a dummy letter.

PowerStation buttons for applications have three parts. In the center is the name of the program; a mouse-click here will open it. Clicking on the small document icon on the right of the button brings up a window where you can install a list of documents used frequently with that application. You can make one of them the "default" document, which will be selected automatically whenever you click on the document icon. Or you can go further and use the Dedicate command to assign the whole button to one document.

When you click on the left portion of the standard PowerStation button (a symbol vaguely resembling a menu), you get a pop-up menu that contains commands for renaming, cutting, copying or replacing the button with another button previously placed in the PowerStation Clipboard. Any button can be dragged or pasted to an unused slot on the page as long as it is on the program's predetermined grid, which on the standard Mac screen has 27 positions in three columns of nine. PowerStation is smart enough, however, to allow more buttons on larger displays. Unlike Oasis, a competing shareware product (See related story.), PowerStation does not let you resize buttons, and your choice of fonts is ordinarily limited to Chicago and Geneva.

PowerStation comes with two larger built-in buttons, one that takes you directly to the Finder and another that brings up a selection box from which you can launch uninstalled applications. Across the bottom of the screen is a set of smaller "page" buttons that take you to additional screens with room for more buttons. You might put your main applications and documents on the "front" page and create others for utilities, games or specialized programs you use less often. Or you could put Word and its files on one page, Excel and its spreadsheets on another and so on. To help you navigate, you can give each page an appropriate name.

PowerStation incorporates a user-configurable screensaver. You choose, among other things, whether you want a fireworks show or a tiny bouncing apple as your reminder when the machine is on. As a "bonus program," the PowerStation disk also includes an independent version of the fireworks display called Pyro!, which works in color on a Mac II.

Easy installation, easy access

Installing PowerStation is easy: Just drag its icon to the System folder. If you want it to come up in place of the Finder whenever you boot up, use the Finder's Set Startup command. There's also an Open PowerStation icon — in the shape of an electrical outlet — to help you launch the program

without burrowing in the System folder.

Virtually all of PowerStation's functions can be accessed directly from the keyboard. A button can be highlighted by pressing the first letter or two of its name, then activated by pressing Return. The arrow keys on Mac Plus and later keyboards will move the highlight from button to button, while the Tab key changes the page. A handy on-screen list of the many keyboard shortcuts is available from PowerStation's Special menu.

Some limitations

We had no trouble learning PowerStation by experimenting and using the on-line help. But some of the numerous options can be confusing, and you may well find yourself turning to the manual. Its 84 clearly written and well-illustrated pages cover the basics, but some issues about which you may be curious are neglected. If you search the three-page index for information about how PowerStation handles large-screen monitors, networks, Switcher or MultiFinder, and color, you will come up empty-handed.

The program is not without limitations, either. Some users may feel that its fixed layout and style don't allow sufficient flexibility in customizing the look and organization they want on the screen. Some may wish that programmer Steve Brecher had included at least a few more file-management functions, such as commands for copying, deleting and renaming files — all of which are available in Oasis.

PowerStation also suffers from a few performance quirks. Because it operates by taking over the Mac screen rather than within a window, it behaves oddly when Desk Accessories try to share the screen.

Like many other fine programs, PowerStation did not work properly with some early test versions of MultiFinder. But Brecher reports that all is well — almost — with the version Apple is about to release. The only significant anomaly is that under MultiFinder, a click on PowerStation's Finder button will crash the system. But another quirk provides an easy work-around. Under MultiFinder the Restart and Shutdown commands on PowerStation's Special menu return you to the Finder instead of doing what they are supposed to.

Brecher promises that the next version, due out by January, will solve all the MultiFinder problems and permit color buttons on Mac II screens.

Conclusion

None of the small problems in the current Version 1.1 is serious considering the benefits of using PowerStation. Software Supply has posted a limited demonstration version of the program on the electronic information services and includes it in the popular Suitcase package. Once you have experienced the speed and convenience of PowerStation, we doubt that you will soon forsake it for the sluggishness and clutter of the Apple Finder.

*Jack Hodgson was founding director of the world's largest Macintosh users' group, the Boston Computer Society's BCS*Mac.*

Oasis 2.0: A shareware alternative

BY HENRY NORR

MacWEEK Staff

At \$59.95 PowerStation is a bargain, and it is even less expensive from discount outlets. But you'll never find it for less than the \$15 registration fee that programmer Jan Eugenides charges for Oasis 2.0, a newly enhanced shareware program that works similarly to the Software Supply product. Oasis lacks a few of PowerStation's bells and whistles, but it's just as fast and functional, and considerably more flexible in some important ways.

What distinguishes Oasis is that it leaves you free to design it to suit your tastes and needs. There's only one page — from Eugenides' point of view, getting away from multiple levels is the whole point of such utilities. But on Oasis' page, which can be resized, you can have up to 100 buttons, each in the size and location you want. (The new version includes an optional grid to help you give the window some structure.) With the Preferences command, you can choose the font and point size of the button labels, and you can have document buttons with or without the associated application's name showing. If you have a Mac II with a color monitor, you can select the color of Oasis' background screen.

As in PowerStation, you can assign Desk Accessories, applications and documents to

buttons. But Oasis has other options as well: You can make buttons for FKeys, Command-key macros from Symmetry's Tempo, and Oasis' own menu commands, which include copying files, creating folders and file-management functions missing from PowerStation.

According to the documentation (which is built into the program), you can use any PICT file as the background screen for Oasis simply by saving it under the name OasisPICT and putting it in the System folder. In theory, you could add headings and boxes for groups of buttons, as well as your company logo or a personal message. Unfortunately, we couldn't make this feature work. We tried making PICT files from several programs, but Oasis crashed or hung every time until we got rid of our OasisPICT.

We reported the problem to Eugenides, and judging by his past record in upgrading Oasis, we expect that he will soon have the bug exterminated. In the meantime, the program's other functions seem reliable. If you are in the market for a flexible and economical Finder substitute, Oasis 2.0 deserves a close look.

Oasis 2.0 is available from electronic bulletin boards and users' groups. The \$15 registration fee, payable to Jan Eugenides, RR1 Box 9463, Waterbury Center, Vt. 05677, entitles the owner to free upgrades for life. ■

Breaking barriers to multimedia technology

BY PRISCILLA BURGESS

MacWEEK Staff

CUPERTINO, Calif. — "Imagine," said Brenda Laurel, "going into a travel agency. You see a screen and on the screen is a revolving image of the earth. You pick a spot on the globe — with either a touch-sensitive screen or a mouse — and suddenly, you are flying low over a town you want to visit. You click on a hotel you see and zoom in to look over a room. Then you switch to text, and see how much the room costs."

Laurel, 36, is a consultant to the K-12 marketing group at Apple, working on a problem that has been around for a while but is still unsolved — the future of multimedia use of computers. "The technology has been around for about 10 years now, but no one has really pulled it all together and made good use of what is out there," Laurel said.

And what is out there? The technology for sound synthesis, digitized pictures and video, and voice recognition. This technology, combined with text and database applications, provides the ingredients for a rich multimedia environment.

While activity and interest in using multimedia abounds, a couple of barriers hinder widespread use. One is the cost, both of producing quality programs and of the equipment itself. The other impediment is figuring out an orderly way to access the voluminous amounts of information that videodiscs can hold.

Laurel's role at Apple is to work out strategies for searching and accessing information using the Macintosh and HyperCard. Her goal is to involve users to the point that

they are moving around in the multimedia environment like actors participating in a play.

"Users assume that there is a ghost in the computer that runs around inside doing what you tell it to do," Laurel said. "I would like to see the computer disappear so that users, not the 'ghost,' are controlling the activities of the computer. The computer is still a barrier

between users and the information they are seeking."

This separation between the user and the computer is a concept she has been working to overcome, and her approach is unique. Laurel has an education in drama, including a doctorate in theory and criticism from Ohio State University in Columbus. An actor and theater director, she approached the design of games and educational software as she would a theatrical production.

Using the concept of interactive fantasy, upon which her doctoral dissertation was based, Laurel designed games and learning software for Atari and Activision. The idea of interactive fantasy is to pull users into the software as if they were an essential part of the product. The goal is to create a software environment that would be totally involving for the user.

Laurel was part of the Atari Systems Research Laboratory under Alan Kay from 1980 to 1984. She worked on developing the theoretical base and external design of a system that would give users first-person dramatic experiences in imaginary worlds.

Through her experience in designing games and educational software, Laurel has refined her approach to interactive software. She said, "Efforts to involve the user have often resulted in software

Brenda Laurel: "The computer is still a barrier between users and the information they are seeking."

that was too complex and required too much of the user. The result was loss of interest rather than complete involvement."

At Apple, Laurel is working to reduce the effort required from the user to participate in the richness of the software environment possible in the multimedia world. She said she believes that computers should empower users by increasing their ability to do whatever it is they want to do. The proper use of multimedia systems, she said, can bring the user closer to "empowerment" than other kinds of systems.

Empowerment is a theme that runs throughout Laurel's work. "Working at Apple is exciting because Sculley (Apple president, CEO and chairman) is encouraging products that empower users," she said.

This is a refreshing approach, said Laurel, because "one of the unfortunate ideas that is all-pervasive is that a computer is a tool for counting. Actually, a computer is a device that can represent reality; it's a representation machine, not a counting machine."

Laurel said she is working toward the day when a student who has to prepare a report on whales, for example, will be able to move through a multimedia disk that contains all the photographs National Geographic has ever taken of whales, sounds of whales, text taken from encyclopedias and videotapes of whales taken in the ocean. Rather than writing a report, the student would browse through the information and create a HyperCard stack that he would submit to his teacher on a disk.

Laurel said this level of information access is possible only through multimedia and only if the cost of the technology drops substantially. She said she believes there is a tremendous potential and that with Hypercard and the Mac, usable multimedia systems are not far away. ■



MONICA LEE

MacHeaven gives old Macintoshes new life

BY CLIFF LEHMAN

MacWEEK Staff

WASHINGTON — Old Macs don't die; they go to MacHeaven. And according to the gatekeeper, the ticket for admission is living this life as a Macintosh 128K, 512K or Plus.

Kevin Hopkins, director of MacHeaven in Washington, D.C., has overseen the buying and selling of hundreds of used Macs throughout the country since August.

Hopkins started working for MacHeaven's parent company, Trace Inc., a custom software developer, in June after earning his master's degree in business administration from the University of Virginia in Charlottesville. He previously worked as an aerospace engineer for the Navy after receiving a degree in engineering from the University of Virginia in 1983.

To his surprise, he finds himself acting as a sort of commodities broker for used Macs, Hopkins said.

"We quote prices over the phone, but the market fluctuates so much on both sides that prices can change by \$100 in one day," he said.

The company is now closing deals for 30 to

50 Macs at a time and buying and reselling the machines all over the country, he said.

While the majority of the used Macintoshes MacHeaven gets are 128Ks, 512Ks or Pluses, Hopkins said the company has bought some SEs and even a few Mac IIs.

Hopkins sees MacHeaven as a service to dealers and users as well as to newcomers to the Mac.

MacHeaven was the result of looking for a software solution for a catering company in the Washington area in August, Hopkins said. The caterer needed a Mac for its busy kitchen. Not wanting to expose a new Mac to spattered food or greasy-fingered cooks, Hopkins set about finding a used Mac 512K for the job.

Hopkins found a Mac for the caterer, discovered a potential market for 1 million similar Macs and started MacHeaven.

"We saw that Apple was isolating a million installed Macs with no upgrade path to their new machines," said Hopkins.

A hot kitchen filled with greasy-fingered cooks may sound more like MacHell than MacHeaven for a used Mac. But for owners of

Mac 128Ks and 512Ks afraid to be cut off from upgrades to the Macintosh mainstream, MacHeaven is one way to ease the move to a Mac SE or II, according to Hopkins.

"It also provides a service to Apple dealers because people are walking into stores wanting to get rid of machines. It smooths the way for people wanting to move up to Mac SEs or IIs," he said.

With the Mac 512K being phased out, said Hopkins, there is no real, low-price, entry-level machine for the Mac.

"We want to get those old Macs out of the closet so others can find out what the Mac is all about," said Hopkins. ■



LISA BERG

MOTOROLA

Continued from Page 1

ship it in volume before next June, said a number of workstation manufacturers.

"We're waiting for volume shipments of the 25 MHz version of the '30, and we don't know when that will be yet," said John Hime, Sun Microsystems' workstation product marketing manager. "A lot of our customers have been asking for the new chip."

Sun's chief competitor, Apollo Computer

Inc. of Chelmsford, Mass., is expected to introduce the DN2000, a high-performance workstation node based on the 16-MHz or 20-MHz version of the 68030, priced at less than \$5,000 before the end of the year.

The new microprocessor is the latest in the 68000 family that Motorola of Austin, Texas, has been developing and producing since 1979. About 88 percent of the workstations on the market in the United States and an even larger

percentage of systems in Japan are based on 68000 chips, according to a report from Dataquest, a San Jose, Calif., market research firm.

The "Oh Thirty," first announced in September 1986, is intended "to offer faster and more efficient execution of computation-intensive tasks and to reduce the price of personal computers and workstations," said Jeff Nutt, Motorola's technical marketing manager in the microprocessor products group.

The 68030 chip provides greater processing efficiency because data and instruction caches, or small dedicated memory chips, reside on board. Data caches are used to store data that is used repeatedly to process an application.

In computers based on the 68020 and earlier processors, vendors have either developed their own caches or relied on the computer's RAM to store data and instructions. Both solutions slow down processing speeds and affect the price of high-performance workstations, according to Nutt.

The caches operate in a "burst-fill" mode, which means that the least recently used algorithm is thrown away, and the next instruction called by the application is already waiting to take its place in the instruction cache.

The on-board caches will increase processing speeds considerably for intensive applications such as CAD, according to a study conducted by Detroit-based Unisys.

The new 68030 also includes an on-board page-memory management unit (PMMU) required for UNIX-based computers. Apple will sell a separate Motorola PMMU when its UNIX for the Mac II ships next year, adding

approximately \$300 worth of hardware to the price of A/UX.

The availability of the 68030 gives Motorola new ammunition in its competition with Intel Corp. of Santa Clara, Calif., manufacturer of the 80286 and 80386 chips used in IBM PCs.

"The Motorola family is a better family than the Intel. The extensibility (to 32 bits) of the Motorola family vs. the Intel's restricted 16-bit (80286) architecture makes the 68000 much more competitive," said Hambrecht & Quist's Herwick.

Motorola wasn't always as competitive with Intel as it is today. Both companies originally built 8-bit processors, and "because Intel's 8080 series hit the market before our 68000, they had an early lead," said Jack N. Browne Jr., Motorola's manager of 68000 marketing and applications engineering.

To compete with Intel, Motorola decided to redesign the 68000 and offer 8-, 16- and 32-bit address migration paths so that personal computer and workstation manufacturers could offer higher performance systems without requiring a new operating system, such as OS/2 for the Intel 80286 and 80386, to exploit the faster processors.

"We took a real chance back in 1982, when it looked like Intel and IBM had the real competitive advantage. Now we're ahead," Browne said. "Today, you can get a Mac II and run the same [existing Mac] software on it without any modifications to Mac OS. Intel's 80386 requires Microsoft and IBM to come up with a new operating system that we won't see until 1989." ■

MICROSOFT

Continued from Page 1

Darrell Boyle, a software analyst with Trailblazer Consultants of Saratoga, Calif. "If Microsoft is introducing Write, it is segmenting the word processing market into various categories. What's next for Microsoft? Desktop publishing?"

"We see this as a way to fill out our word processing lines," said Jon Reingold, Microsoft's product marketing manager for Mac word processing. Microsoft Write is "a simpler version of Word."

Reingold said the target customer for Write is the occasional writer who doesn't produce documents every day, usually writes short documents and doesn't use a high degree of formatting.

"It's faster than MacWrite or WriteNow by our benchmarks," he said.

PANIC

Continued from Page 1

"We're in the midst of a PC boom, but if the economy goes into a recession, PC sales have to be impacted to some degree," said Michael Orsak, a securities analyst for Robertson, Colman & Stephens, a San Francisco investment bank.

"None of us see this as a potential recession. The market needs a correction," said market analyst Tim Bajarin of Creative Strategies in Santa Clara, Calif. "Most of the high-tech stocks were incredibly inflated."

Analysts agree that high interest rates pose the greatest threat to consumer-oriented companies.

"If interest rates rise, that brings down the valuation of high-flying, high-tech companies," Orsak said.

"As interest rates move up, it eats into discretionary income," said Joseph Perates, a

The program includes on-line, context-sensitive help as well as some of the key features found in its more expensive counterpart, Word, including an 80,000-word customizable spelling checker, automatic footnotes, multiple columns and on-screen page preview capability. Write, however, does not include Word's outliner, style sheets, glossaries and customized menus for streamlining long or repetitive document processing.

The program requires at least a Mac 512K and is MultiFinder compatible.

Microsoft is offering an upgrade from Write to Word for \$220, the difference between the suggested retail prices of the two programs.

Microsoft Corp. is located at 16011 N.E. 36th Way, Redmond, Wash. 98073; (206) 882-8080. ■

financial consultant for Thomson McKinnon in Newport, R.I. "On the perimeter of the PC market, you'll see marginal buyers standing aside and waiting to see if they can justify making a purchase. They are uncertain as to the market outlook."

Arc Laser Optical Technologies Inc. (ALOT) of Scotts Valley, Calif., last week saw its initial public offering put on ice while underwriters gauged how the stock market shakeout would affect the stock's chances for a successful capitalization.

"If the market continues upward, we'll get our funding, but if it takes a drop, who knows?" said Bob Lindgren, CEO of ALOT. The company, which recently changed its name from LoDOWN, seeks to raise \$2.5 million on the Vancouver Stock Exchange. ALOT produces Mac-compatible CD-ROM and worm drives, among other products. ■

Moniterm to debut 24-inch monitor at COMDEX

BY CLIFF LEHMAN

MacWEEK Staff

MINNETONKA, Minn. — Moniterm Corp. has redefined the dimensions of large-screen monitors by introducing the first 24-inch monochrome monitor for the Mac SE and II. The company also is marketing a 19-inch color monitor for the Mac II. Both monitors will debut at the COMDEX show in Las Vegas Nov. 2-6.

The Viking 2400 will be available in the first quarter of 1988 and retail for \$2,995. The 16-by-20-inch screen can display facing tabloid pages, four standard 8.5-by-11-inch pages, a full B-size engineering drawing or a 134-by-68-cell spreadsheet, the company said.

In addition, the machine offers a resolution of 1,280 by 960 pixels.

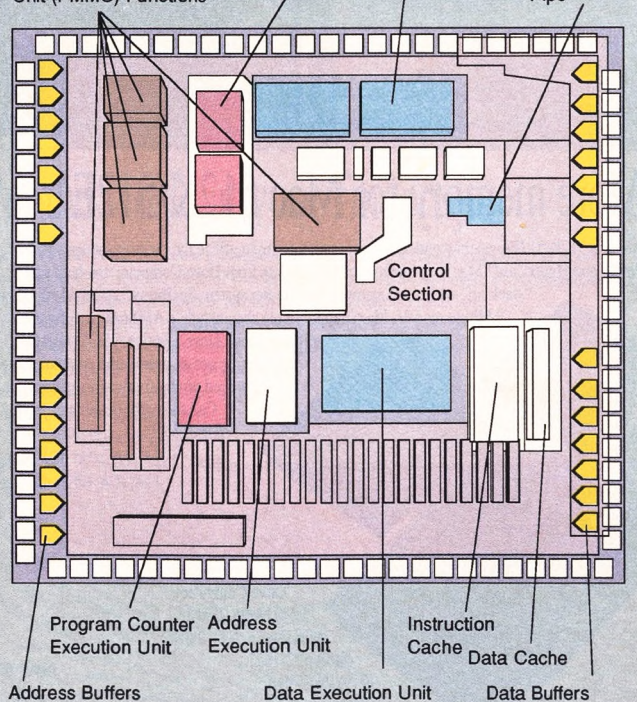
The Viking 10 19-inch color monitor for the Mac II has a resolution of 1,024 by 768 pixels. The 72-dpi monitor displays 256 colors from a palette of 16.8 million colors or 256 shades of gray. The color monitor, retailing for \$4,795, is available now.

Moniterm offers both monitors to OEM as well as retail customers. The Viking 2400 is compatible with the IBM PC and PS/2 series; the Viking 10 is compatible with the IBM PC.

Moniterm Corp. is located at 5740 Green Circle Drive, Minnetonka, Minn. 55343; (612) 935-4151. ■

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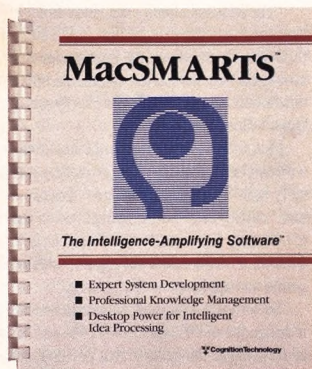
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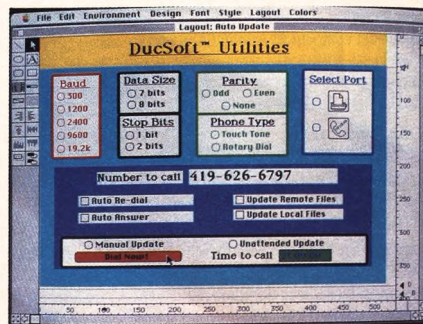


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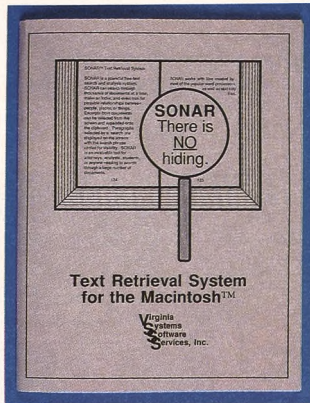
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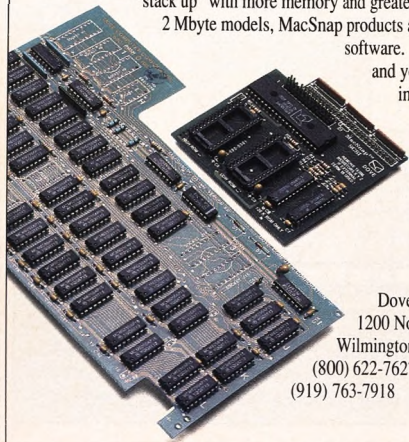
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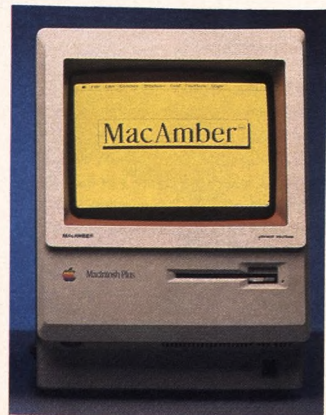
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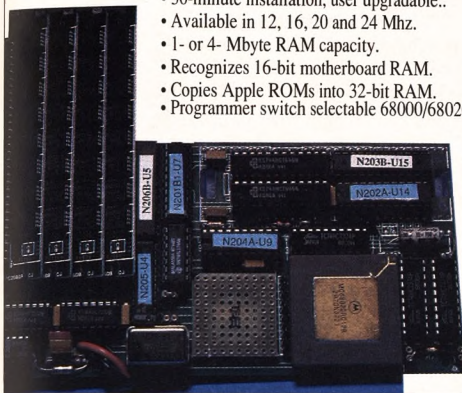
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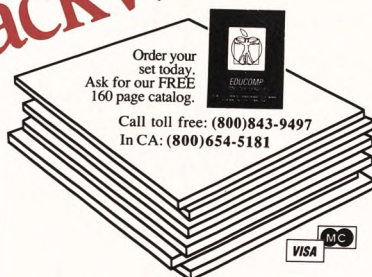
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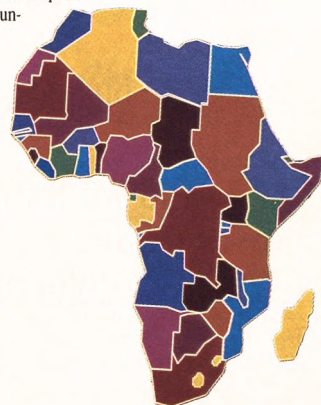
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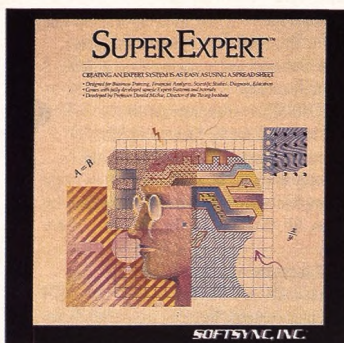
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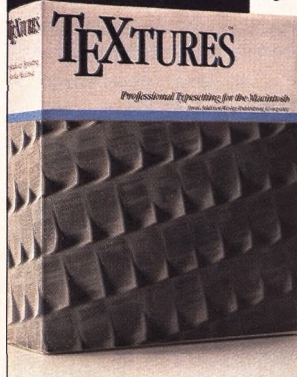
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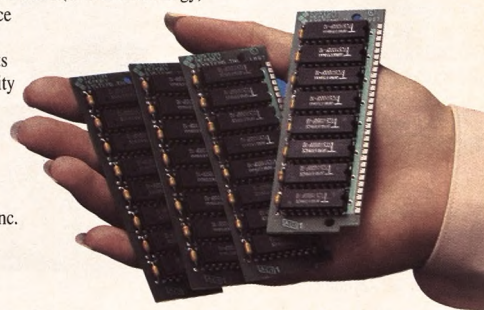
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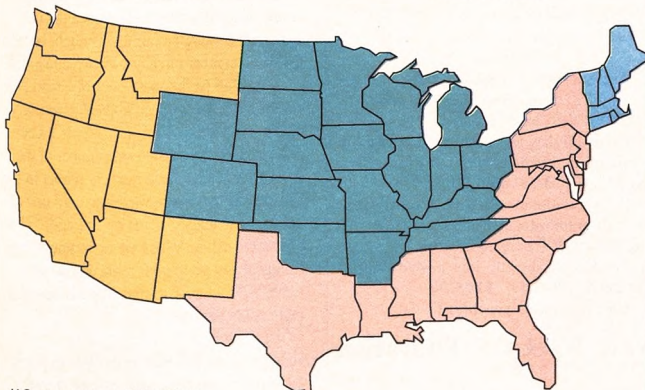
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MAC THE KNIFE

The Knife is generally too busy to dirty himself in intramural sports, but he was amused to hear about the reaction of one computer magazine publisher to an editorial written by another. The exchange was tipped off by a holier-than-thou manifesto concerning computer-journalism ethics that recently appeared in three "worldly" monthlies emanating from a San Francisco computer publishing shop. The essence of the piece was that most computer

pubs have sold their souls to advertisers — except, of course, the publishers' own pristine properties.

The column raised hackles throughout the industry, but the mailed response from the chief of a New Jersey-based publishing company was most elegant: a spanking new kettle and a can of black paint.

The Knife can't top that, but he has to wonder how the Opinion Editor of the kettle publisher's new fortnightly can regularly take swipes at competitors in her column in a San Francisco Sunday paper without disclosing

who signs her paycheck.

Official beta testing for the best 1:1 spreadsheet in Southern California begins in the middle of November. But don't refer to it anymore as Glass. The code-namers have been reading their Edith Hamilton and were enamored with the image of a flying horse.

Pennies from heaven

Everyone assumes that if you leave Apple to start a software company that launches a hit product and then gets acquired by Microsoft for \$14 million, you can retire for life on the

proceeds. 'Taint necessarily so if the venture capital boys have their hooks in deep. That may explain why Rob Campbell took only a short vacation and is back in circulation. Mac hears his cut of the Forethought deal was surprisingly small.

A Knife spy has seen a trio of 68020-based PostScript printers in the labs at Apple, each with functions and features for different price points. The middle and high-end models have SCSI ports, allowing hard disks to be connected for font storage.

Another Apple insider says the rift between engineers who believe in all-in-one Macs and those who favor the three-piece approach is widening. Issue: Should the SE successor be a color 020 model in the familiar housing or a small footprint box with a removable monitor? Knife handicap: Put your money on the latter.

It seems from the recent letter Blyth sent to registered owners that the company is suddenly concerned about its Omnis copyright. But maybe someone should have checked the printer output before sending the letter. The missive asked Omnis owners to affix enclosed stickers printed with a revised copyright notice to each disk and piece of documentation. But in at least one case, each of the half-dozen stickers was printed black. Red might have been more appropriate. That's the color some users begin seeing when they think a developer is more concerned with legalities than in upgrades.

Risky business

Here's a wild one: a RISC chip that emulates the instruction sets of both the 68020 and 80386. Sounds like anything but a *reduced* instruction set computer to the Knife. Wilder still, the tipster claims the silicon beast is the baby of a three-lettered computer company with a lab in Yorktown Heights, where the RISC concept was invented.

Not only has Jasmine absorbed SuperMac's tech support team lock, stock and barrel, the upstart drive maker is going after its competitor's dealer contracts. A major retailer headquartered in Palo Alto that was a big seller for SuperMac is about to announce a deal with the Jasminians.

Those radio-controlled cars of ACIUS' are threatening to steal the show from its database. That seemed to be the case when Guy Kawasaki conducted a raffle after his appearance last week at the Boston Computer Society. The winner could take home a copy of the program or one of the toy racers. He picked the car. Turns out it wasn't a fair test, though, because the BCS member already owned a copy of 4D.

Next stop on the radio-control Grand Prix circuit was Chicago, where ACIUS recently held a developers' seminar in Apple's Loop offices. Between sessions, a member of the ACIUS crew laid some race-car rubber in the hallway. Zoom zoom, what fun, until one of the Apple managers came by and said: "This is a business office, where we do business things. I suggest you go to your room and do the same." One more sign that Apple is becoming more sober than IBM.

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Bill Hulbig: On HyperCard®

HyperCard, the most significant advance in business productivity since the computer itself!

Ridiculous you say?

Well, those of you who recognize me as President of the MicroGroup, or as the central figure in the 1988/89 Thomas Register® advertising campaign, know my reputation and integrity. In the event you don't, the MicroGroup is a key, and often sole source supplier, of critical, precision, components to the medical, electronic, defense, and aerospace industries.

In 1985, the MicroGroup, elected not to upgrade to a VAX®, but rather, "gamble" on the Macintosh®. The outstanding success in processing 15,000 orders/year for over 6,000 customers, with 7,500 inventory items, including 3,500 with certification and traceability, 500 vendors, 100,000+ mailing lists, all without the availability of networking, is still an

accomplishment matched by few.

In 1986 I tried OMNIS® and HELIX®, but found them totally unacceptable, and instead purchased an Apple developer. I bought the Desktop Software Macintosh line consisting of 1stBASE (enhanced and reintroduced as 1stFILE), 1stPORT, and 1stMERGE. That eventually created what is now 1stDESK Systems, Inc.

In 1987 I purchased Mac Fill-In from Cognitive Concepts and introduced the 90-second paper-form-to-screen-form database.

Well, this is almost 1988 and Apple has introduced HyperCard, which I believe can increase productivity of at least 30% in the number of orders processed per employee at the MicroGroup, yes, 30%!

Now, about HyperCard.

What it is?

Bill Atkinson clearly stated to me in Chicago recently, that HYPERCARD IS NOT A DATABASE!

HyperCard is best described it as TWO separate products:

- HYPERCARD, a free-formatted card file system with nearly instantaneous look-up and linking.
- HYPERTALK, similar to TEMPO®, or an application that can be easily programmed to run itself, as well as other applications, notably a database.

Why is 1stDESK promoting it?

1stDESK is currently the only family of database products that make sense to use with HyperCard. There is little known about HyperCard, it's free, it's high volume, has no Apple support ... a once in a lifetime opportunity for 1stDESK! VARS and dealers are already calling to get in early too. The simplicity, ease of use, uniqueness, speed, and unequalled database reporting power of 1stDESK products, driven with a HyperCard front-end, has propelled 1stDESK into a new category of Fortune 500 solutions.

The unique ability to instantly apply the MicroGroup as a Beta test site, combined with 1stDESK owning the program code, ensures the fastest route to market of a tested, and applied product. 1stDESK is already working on enhancements based on HyperCard interfacing, and a more realistic approach to safe, networked, off-line "clusters".

What's available now.

1stSTEP: \$24.95

Tutorial/Demo Package (Used at the Univ. of Pennsylvania as courseware)

1stPORT-3.5: \$295.00

Connectivity to another computer, or another Macintosh application.

1stFILE-3.5: \$95.00

Fully relational, programable, database with extraordinary report generator.

1stMERGE-3.5: \$95.00

Merge data directly into a MacWrite.

1stSCAN-3.5: \$195.00

Ultimate forms generator!

Next Week: On Education

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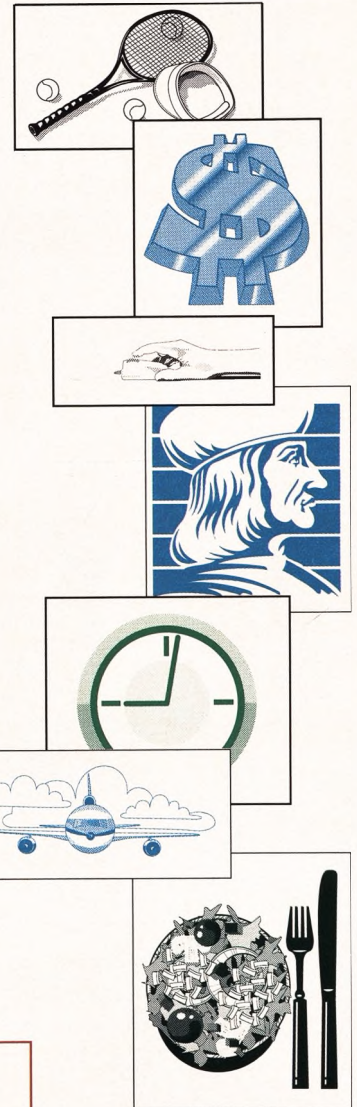
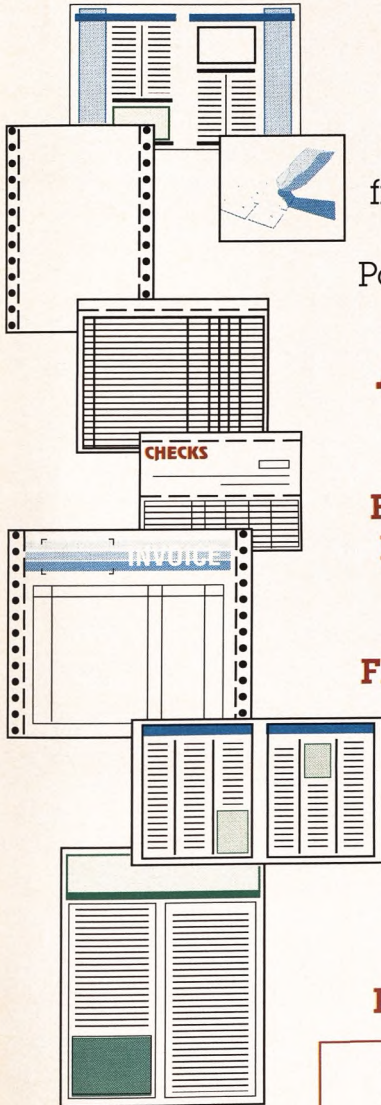
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